Tetra Tech EM Inc.

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September 10, 2001

Ms. Mary Grisolano
Work Assignment Manager
U.S. Environmental Protection Agency Region 7
901 North 5th Street
Kansas City, KS 66101

Subject: Documentation of Environmental Indicator Determination
Steelcote Manufacturing Company, St. Louis, Missouri

Dear Ms. Grisolano:

Tetra Tech EM Inc. is pleased to submit this Documentation of Environmental Indicator Determination for the Steelcote Manufacturing Company in St. Louis, Missouri. If you have any questions or comments regarding this document, please contact me at (913) 495-3951.

Sincerely,

Jessica Kidwell

Jessica Kidwell

Enclosure

cc: Aaron Zimmerman, EPA Regional Project Officer (cover letter only)
Ed Sussenguth, Tetra Tech Program Manager (cover letter only)
Kathy Homer, Tetra Tech Regional Program Manager (cover letter only)
File
Document Control

RCRA

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 09/10/01

RCRA Corrective Action
Environmental Indicator (EI) RCRIS Code (CA725)

Current Human Exposures Under Control

Facility Name: **Steelcote Manufacturing Company**
Facility Address: **One Steelcote Square, St. Louis, Missouri**
Facility EPA ID #: **MOD006275036**

1. Has **all** available relevant/significant information on known and reasonably suspected releases to soil, groundwater, surface water/sediments, and air, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

   __X__ If yes - check here and continue with #2 below.

   _____ If no - re-evaluate existing data, or

   _____ If data are not available skip to #6 and enter"IN" (more information needed) status code.

Rationale and Reference(s):

The Steelcote Manufacturing Company (Steelcote) facility (site) is located at One Steelcote Square in St. Louis, Missouri (see Figure 1). About 80 percent of the site's areal extent is covered with buildings, structures, or concrete paving (see Figure 2; Shannon & Wilson, Inc. [S&W] 1992a). The site structures are described below:

Building 1

Building 1 is a five-story building, with a basement and two penthouses. The basement of the building is used to store hazardous wastes, and the first floor is used to store raw materials, and hazardous wastes in satellite accumulation containers. Mixers and three 500-gallon process tanks also are stored on the first floor. The quality assurance/quality control laboratory is located on the second floor of the building, as are the packaging and labeling (but not printing) operations. Ball mills for pigment grinding and three reduction tanks are located on the third floor. Grinding, mixing, solvent blending, and drying operations take place on the fourth floor, requiring two 100-gallon tanks and a 15- by 25-foot drying oven, heated with a water jacket. The oven is used to dry powders used in moisture-cured urethanes. The research and development laboratory and a mixing area are located on the fifth floor. The eastern penthouse is a paint spray booth, while the west penthouse holds about forty 100-gallon tanks containing raw vegetable oil, refined vegetable oil, naphtha, toluene, xylene, Oleum, and Hi-sol. The contents of the western penthouse tanks are transferred to various operations within the building by gravity feed (S&W 1992a).

Building 1A

Building 1A is a storage facility for drummed raw materials, including resins, solvents, and dry materials. The raised tin shed originally belonged to the Columbia Oil Company.

Building 2

Building 2 houses a small office, two storage rooms, and a valve control for storage tanks.

Building 3

Operations in Building 3 were closed in 1971; however, 55-gallon drums of vegetable oils and varnishes continue to be stored there. Tanks were once used for storage inside the building, but have since been removed. An inert nitrogen gas generator is located outside of the building's north wall, but the generator has never been used.

Building 3A

An operating, natural gas-fired boiler is located in Building 3A, immediately adjacent to building 3.

Structure 4

Structure 4 is a stone and reinforced concrete platform. Six 10,000-gallon, aboveground storage tanks (AST) are located on the platform, and two of the tanks are still in use. The tanks have been used to store fuel oil, Hi-sol, soya oil, xylene, toluene, and oleum. One 8,000-gallon, underground storage tank (UST) is located beneath the platform and the vertical ASTs. This tank once stored tung oil and is still present, but is no longer in use. Three 2,000-gallon, horizontal ASTs are located along the southern side of the platform, and one 2,000-gallon, horizontal AST is located along the northern side of the platform. The tanks are used to store xylene, Hi-sol, and butanol and are still operable.

Structure 4A

Structure 4A is located immediately north of structure 4 and was formerly the location of an 8,000-gallon Hi-sol storage tank. The UST was removed in 1990 or 1991. An existing 15,000-gallon UST is located east of Structure 4A and south of Structure 3A. This UST was used to store bunker (#6) oil.

Building 5

Building 5 previously was used for sandblasting but now is used for hazardous waste storage. A compressor also is stored in the building, A gas meter shed is attached to the building's southern side.

Building 6

Building 6 is a former fuel-operated varnish reducing unit that is no longer in service. Three burners and stacks for cooking varnish are located in the building.

Building 7

Building 7 is a former varnish reducing unit that is no longer in service.

A site investigation (SI) report identifies the Structure 4A area, specifically, the 1991 UST excavation, as the only substantiated source of contamination at the site (S&W 1993d). The UST was excavated, decommissioned, and removed from the site in 1991; however, the contaminated soil surrounding the UST was never removed. Soil samples were collected, and the excavation was backfilled. Soil samples collected prior to backfilling indicated the presence of toluene at 12 milligrams per kilogram (mg/kg), ethylbenzene at 108 mg/kg, xylenes at 405 mg/kg, total petroleum hydrocarbons (TPH) at 750 mg/kg, and unknown alkyl benzenes at 228 mg/kg in the subsurface. Methylene chloride was detected in the method blank, qualifying its presence in the soil samples. Consistent xylene and toluene detections appear in groundwater samples from Monitoring Well SWGW-1(C), which is located near the former UST at the Structure 4A location. Lead is the inorganic contaminant of concern in groundwater at the site. However, because lead has been detected in samples collected upgradient of Steelcote, the facility claims an off-site source for this contaminant.

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

EI are measures being used by the Resources Conservation and Recovery Act (RCRA) Corrective Action program to go beyond programmatic activity measures such as reports received and approved and so on to track changes in the quality of the environment. The two EIs developed to date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for nonhuman (ecological) receptors is intended to be developed in the future.

Definition of "Current Human Exposures Under Control" EI

A positive "Current Human Exposures Under Control" EI determination ("YE" status code) indicates that there are no "unacceptable" human exposures to "contamination," that is, contaminants in concentrations in excess of appropriate risk-based levels that can be reasonably expected under current land and groundwater use conditions (for all "contamination" subject to RCRA corrective action at or from the identified facility [sitewide]).

Relationship of EI to Final Remedies

While final remedies remain the long-term objective of the RCRA Corrective Action Program the EIs are near-term objectives that currently are being used as program measures for the Government Performance and Results Act of 1993. The "Current Human Exposures Under Control" EIs are for reasonably expected human exposures under current land- and groundwater-use conditions ONLY, and do not consider potential future land or groundwater use conditions or ecological receptors. The RCRA Corrective Action Program's overall mission to protect human health and the environment requires that final remedies address these issues, such as potential future human exposure scenarios, future land and groundwater uses, and ecological receptors.

Duration / Applicability of EI Determinations

EI determination status codes should remain in the Resource Conservation and Recovery Information System (RCRIS) national database ONLY as long as they remain true. RCRIS status codes must be changed when regulatory authorities become aware of contrary information.

2. Are groundwater, soil, surface water, sediments, or air **media** known or reasonably suspected to be **"contaminated"**[1] above appropriately protective risk-based "levels" (applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria [e.g., Maximum Contaminant Levels (MCLs), the maximum permissible level of a contaminant in water delivered to any user of a public water system under the Safe Drinking Water Act] from releases subject to RCRA Corrective Action (from SWMUs, RUs or AOCs)?

	Yes	No	?	Rationale / Key Contaminants
Groundwater	X			
Air (indoors)[2]		X		
Surface Soil (e.g., <2 ft)		X		**Please See**
Surface Water	X			**Description Below**
Sediment		X		
Subsurf. Soil (e.g., >2 ft)	X			
Air (outdoors)		X		

_____ If no (for all media) - skip to #6, and enter "YE," status code after providing or citing appropriate "levels," and referencing sufficient supporting documentation demonstrating that these "levels" are not exceeded.

__X__ If yes (for any media) - continue after identifying key contaminants in each "contaminated" medium, citing appropriate "levels" (or provide an explanation for the determination that the medium could pose an unacceptable risk), and referencing supporting documentation.

_____ If unknown (for any media) - skip to #6 and enter "IN" status code.

Rationale and Reference(s):

Steelcote is located in the Mill Creek Valley area of St. Louis, Missouri. Mill Creek Valley was one of the first industrialized areas within St. Louis, and the area's history of industrial development predates the Civil War. Steelcote currently is surrounded by industrial properties and is likely to remain so in the future. Prior to Steelcote's establishment, a number of operations, including a railroad line and a stockyard, occupied the site. Steelcote is located about 2.5 miles west of the Mississippi River and 18.5 miles south of the Missouri River. Mill Creek has been diverted to accommodate the industrial development of St. Louis. Engineered developments along the Mill Creek Valley include railroad lines and drainage ditches running parallel to the valley and storm sewers located beneath and adjacent to the railroad lines. The Mill Creek Valley area has been extensively filled and graded. Much of the placement fill used in the Mill Creek Valley area is industrial in origin, consisting of power plant ash, demolition debris, and other industrial waste products.

A RCRA Section 3013 Administrative Order on Consent dated September 30, 1991 required Steelcote to investigate contamination at the site based on two compliance evaluation inspections (CEI) previously conducted there. A 1992 SI (S&W 1993d) included excavation of seven soil borings (A through G) and installation of monitoring wells with 45- to 50-foot screens in four of the borings (A through D). Soil samples were collected at various depths from each of the borings, and groundwater samples were collected from the monitoring wells on a quarterly basis. After seven quarters of sampling, the monitoring wells were abandoned because of the inappropriate length of their screens. Four new soil borings (H through K) were excavated at the site in August 1994, and four new monitoring wells (H through K) with 10-foot screens were installed in those borings (S&W 1994; Environmetrics 1994). Soil samples were collected from each of the borings, and groundwater samples were collected from the new monitoring wells for three quarters. Although four quarters of sampling were proposed for these wells, Steelcote petitioned the U.S. Environmental Protection Agency (EPA) for termination of additional sampling after the third quarter of sampling. Termination was granted on June 19, 1995. No air sampling has been conducted by the facility to date.

Soil

Soil samples were collected during May and June 1992 (S&W 1993d) and August and September 1994 (S&W 1994; Environmetrics 1994). Compounds detected during these sampling events are summarized in Table 1. Soil samples were also collected prior to backfilling the excavated UST at Structure 4A. The excavation soil samples revealed toluene at 12 mg/kg, ethylbenze at 108 mg/kg, xylenes at 405 mg/kg, TPH at 750 mg/kg, methylene chloride at 42 mg/kg, and unknown alkyl benzenes at 228 mg/kg in the subsurface. The detection of methylene chloride was qualified, due to the presence of this compound in the method blank. The depths at which the excavation soil samples were collected were not reported to the EPA.

TABLE 1

SUMMARY OF SUBSURFACE SOIL DETECTIONS AS COMPARED TO REGION 9 INDUSTRIAL PRELIMINARY REMEDIATION GOALS (PRG)

Analyte	Maximum Concentration (mg/kg)	EPA Region 9 Industrial Prelimnary Remediation Goals (mg/kg)
Barium	243	100,000
Cadmium	2.5	810
Chromium	33.5	450
Nickel	46.8	4,100
Lead	675	750
Benzene	0.003	1.5
bis(2-Ethylhexyl)phthalate	0.57	180
Ethylbenzene	108	230
Formaldehyde	104	100,000
Methyl Ethyl Ketone	0.18	28,000
Naphthalene	22	Not available
Toluene	12	520
Xylene	430	210
Dibutylphthalate	0.12	88,000
Methylene Chloride	0.3	21
Unknown alkyl benzenes	228	Not available

← 41,000

← 190

Notes:
mg/kg - milligrams per kilogram
Shading - Analytical results for this sample exceeded EPA Region 9 preliminary remedia
goals

Soil sample analytical results were screened against EPA Region 9 industrial soil preliminary remediation goals (PRG) which are based on exposures of 250 days per year for 25 years. Only xylene was detected in subsurface soil, that is soil from a depth greater than 2 feet, at a concentration greater than the PRG for that compound. Only one surface soil sample, that is a soil sample from a depth of less than 2 feet, was collected during these investigations. The surface sample was collected from a depth of 0.6 to 2.6 feet at Soil Boring E. This sample had a xylene concentration of 190 mg/kg, which did not exceed the Region 9 PRG of 210 mg/kg. An estimated 1 mg/kg of toluene was also detected in this sample, but this concentration fell well below the Region 9 PRG of 520 mg/kg. Table 1 contains a summary of subsurface soil analytes, their maximum concentrations, and their corresponding PRGs. Concentrations in exceedence of EPA Region 9 industrial PRGs are highlighted.

Groundwater

Groundwater samples were collected from the former monitoring wells (A through D) during June 1992 (S&W 1992b, 1993d), August 1992 (S&W 1992c), November 1992 (S&W 1993a), February 1993 (S&W 1993b), June 1993 (S&W 1993c), August 1993 (S&W 1993d), and November 1993 (S&W 1993e). Groundwater samples were collected from the current four monitoring wells (H through K) during September 1994 (S&W 1994; Environmetrics 1994), December 1994 (S&W 1995a), and March 1995 (S&W 1995b). Groundwater analytical results were screened against EPA maximum contaminant levels (MCL) and EPA Region 9 tap water PRGs. Five compounds were detected in groundwater at concentrations greater than their respective MCLs or tap water PRGs. These contaminants consisted of chromium, lead, bis(2-ethylhexyl)phthalate, toluene, and xylene. Table 2 provides a summary of groundwater sample analytes, their maximum concentrations, and their corresponding MCLs or PRGs. Concentrations in exceedence of EPA MCLs or EPA Region 9 tap water PRGs are highlighted.

Groundwater samples from the current wells (H through K) were all within MCLs and Region 9 tap water PRGs, except for Monitoring Well K, during the second quarter. This sample revealed chromium concentrations at 173 micrograms per liter (µg/L) and lead at 59 µg/L, values in exceedence of the MCL of 100 µg/L for chromium and the PRG of 50 µg/L for lead. A letter dated April 5, 1995, from S&W to EPA, on behalf of Steelcote, disregards the second quarter metal concentrations for Monitoring Well K and requests termination of sampling activities at the facility. An EPA letter, dated June 19, 1995, grants authority to Steelcote to terminate the RCRA Section 3013 Administrative Order on Consent. A second EPA letter, dated July 10, 1995, grants Steelcote the authority to terminate financial assurance requirements. The original April 5, 1995, letter from S&W to EPA states that "the apparent increase in metals concentrations in the second quarter of sampling (well K) is likely due to a one-time change in sample collection procedure. Normally, water samples are collected and placed into clean, empty, plastic sample bottles provided by the laboratory. The samples are filtered at the laboratory, and then analyzed. For the second quarter only, the bottles sent by the laboratory were not empty, but contained acid. We believe that the acid leached some metals out of the sediment in the samples, causing the apparent increase in metals levels." The plan of study for the Steelcote facility specifies that metals samples will be preserved with nitric acid to a pH of less than two. The plan of study does not state that groundwater samples will be filtered either in the field or laboratory. Acidifying the samples acts to keep metals in

TABLE 2

SUMMARY OF GROUNDWATER DETECTIONS
AS COMPARED TO EPA MCLs OR REGION 9 TAP WATER PRGs

Analyte	Maximum Concentration (µg/L)	Maximum Contaminant Level (µg/L)	Region 9 Tap Water Preliminary Remediation Goal (µg/L)
Barium	736	2,000	2,600
Chromium	173	100	55,000
Lead	59	TT at 15	Not available
bis (2-Ethylhexyl) phthalate	72	6	4.8
Formaldehyde	1,100	Not available	5,500
Toluene	2,000	1,000	720
Xylene	2,100	10,000	1,400

Notes:
µg/L - micrograms per liter
TT - treatment technique action level
Shading - Analytical results for this sample exceeded EPA Region 9 preliminary remediation goals or maximum contaminant levels

solution, rather than allowing them to precipitate and be filtered out. The metals results that were used as a basis for terminating the RCRA Section 3013 Administrative Order on Consent were filtered samples from containers that were not preserved properly.

Surface Water and Sediment

Steelcote is located about 2.5 miles west of the Mississippi River and about 18.5 miles south of the Missouri River. Mill Creek has been diverted to accommodate industrial development in the area. No surface water is present on the site; however, storm water samples were collected from four locations at Steelcote during August 1992 (S&W 1993d). Storm water analytical results were screened against EPA MCLs and EPA Region 9 tap water PRGs. Four compounds were detected in storm water at concentrations greater than their respective MCL or PRG. Cadmium exceeded the MCL but not the PRG, while benzene exceeded the PRG but not the MCL. Lead and methylene chloride exceeded both the MCL and the PRG. Because lead was detected in an upgradient storm water sample at 389 µg/L, Steelcote has claimed an upgradient source of lead. Table 3 provides a summary of storm water sample analytes, their maximum concentrations, and their corresponding state and federal WQC. Concentrations in exceedence of state or federal WQC are highlighted.

TABLE 3

SUMMARY OF STORM WATER DETECTIONS
AS COMPARED TO EPA MCLs OR REGION 9 TAP WATER PRGs

Analyte	Maximum Concentration (µg/L)	Maximum Contaminant Level (µg/L)	Region 9 Tap Water Preliminary Remediation Goal (µg/L)
Barium	126	2,000	2,600
Cadmium	7.2	5	18
Chromium	11.5	100	55,000
Nickel	11.9	Not available	730
Lead	417	TT at 15	Not available
Formaldehyde	158	Not available	5,500
Toluene	1	1,000	720
Butyl Benzyl Phthalate	4	Not available	7,300
Methylene Chloride	10	5	4.3
Benzene	1	5	0.35

Notes:
µg/L - micrograms per liter
Shading - Analytical results for this sample exceeded EPA Region 9 preliminary remediation goals or maximum contaminant levels

Sediment sampling has not been conducted at the site. However, the site is 80 percent paved or covered with structures, and no surface water bodies exist on the site. From a risk assessment perspective, human exposure through this pathway unlikely.

Air

Air sampling has not been reported by the facility. Most contaminants are metals and therefore do not pose a hazard to employees at the facility. However, several volatile organic compounds are present and should be assessed to determine their potential for being an indoor air contaminant. The Johnson-Ettinger model was used to calculate indoor air quality from contaminant concentrations in underlying soils. The model is based on values derived for residential exposures. This forms a conservative estimate when used in an industrial setting, because exposure times higher than actual exposures to workers are factored in. Xylene concentrations were used for soil to soil gas modeling, and xylene, toluene, and

bis(2-ethylhexyl)phthalate concentrations were used for groundwater to soil gas modeling. These compounds were selected because they exceeded regulatory standards for the matrices in question. Results of the Johnson-Ettinger model indicated that indoor air did not pose a hazard to workers at Steelcote. The modeled hazard quotients from vapor intrusion to indoor air based on xylene concentrations in soil and bis(2-ethylhexyl)phthalate concentrations in groundwater were at or below the 10^{-6} level. The modeled hazard quotients from vapor intrusion to indoor air based on toluene and xylene in groundwater fell between the 10^{-4} and 10^{-6} levels. Consequently, outdoor air also would not pose a hazard because of dispersion and the lack of a confined space. Appendix A shows the calculations and results of the Johnson-Ettinger model.

Footnotes:

[1] "Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriately protective risk-based "levels" (for the media, that identify risks within the acceptable risk range).

[2] Recent evidence (from the Colorado Dept. of Public Health and Environment, and others) suggest that unacceptable indoor air concentrations are more common in structures above groundwater with volatile contaminants than previously believed. This is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration necessary to be reasonably certain that indoor air (in structures located above (and adjacent to) groundwater with volatile contaminants) does not present unacceptable risks.

3. Are there **complete pathways** between "contamination" and human receptors such that exposures can be reasonably expected under the current (land- and groundwater-use) conditions?

Summary Exposure Pathway Evaluation Table

	Potential Human Receptors (Under Current Conditions)						
"Contaminated"Media	~~Residents~~	Workers	~~Day-Care~~	~~Construction~~	Trespassers	~~Recreation~~	~~Food~~[3]
Groundwater		Yes			Yes		
~~Air (indoors)~~							
~~Soil (surface, e.g., <2 ft)~~							
Surface Water		Yes			Yes		
~~Sediment~~							
Soil (subsurface e.g., >2 ft)		No			No		
~~Air (outdoors)~~							

Instructions for Summary Exposure Pathway Evaluation Table:

1. Strike-out specific Media including Human Receptors' spaces for Media which are not "contaminated") as identified in #2 above.

2. enter "yes" or "no" for potential "completeness" under each "Contaminated" Media – Human Receptor combination (Pathway).

Note: In order to focus the evaluation to the most probable combinations some potential "Contaminated" Media - Human Receptor combinations (Pathways) do not have check spaces ("___"). While these combinations may not be probable in most situations they may be possible in some settings and should be added as necessary.

_____ If no (pathways are not complete for any contaminated media-receptor combination) - skip to #6, and enter "YE" status code, after explaining and/or referencing condition(s) in-place, whether natural or man-made, preventing a complete exposure pathway from each contaminated medium (e.g., use optional Pathway Evaluation Work Sheet to analyze major pathways).

__X__ If yes (pathways are complete for any "Contaminated" Media - Human Receptor combination) - continue after providing supporting explanation.

_____ If unknown (for any "Contaminated" Media - Human Receptor combination) - skip to #6 and enter "IN" status code

Rationale and Reference(s):

Because the facility and surrounding area are highly industrial, residential, daycare, and recreational pathways were not considered to be viable exposure pathways. Because the facility is industrial and 80 percent paved or covered with structures, the food pathway was not considered to be a viable exposure pathway. Potentially viable exposure pathways for evaluation include worker, construction worker, and trespasser.

St. Louis City Ordinance 64771 regulates grading, excavation, construction, and demolition. A permit is required to perform an excavation or undertake construction activities. Ordinance 64771 designates the head of the Division of Building and Inspection as the code official that is responsible for administration of ordinance 64771. On September 21, 2000, and on August 31, 2001, the St. Louis Division of Building stated that there were no permits for construction or demolition at One Steelcote Square. Based on this information, construction is not likely to be a viable exposure pathway for the near future.

The trespasser is a potentially exposed population at the Steelcote facility. No fences, gates, or walls prohibit entry to the facility. Additionally, a drill rig was vandalized during sampling activities at the site, demonstrating that it is possible to trespass on the property. Workers are present on site, and they provide

the second potentially exposed population at the Steelcote facility. The trespasser pathway and the worker pathways are the viable exposure pathways for this site.

Contaminated media at the Steelcote facility are limited to subsurface soil, groundwater, and storm water. The air pathway is not considered to be significant, based on the discussion under question 2 above. Sediment sampling has not been conducted at the site. However, the site is 80 percent paved or covered with structures, and no surface water bodies exist there. From a risk assessment perspective, human exposure through this pathway unlikely. Similar rationale applies to the surface soil pathway. Only one surface soil sample has been collected at the site; however, because the site is 80 percent paved or covered with structures, this exposure pathway is not viable. Additionally, the surface soil sample was not contaminated above appropriate PRGs. Soil contamination deeper than 2 feet is not likely to be encountered by either the trespasser or the worker population. If construction activities were to be conducted on site, the impact of the xylene PRG exceedence in subsurface soil would be reduced by the limited exposure time for the construction worker as opposed to the occupational industrial worker.

Dave Visintainer, Water Commissioner for the St. Louis Department of Public Utilities, stated on August 31, 2001, that residents of the City of St. Louis are required to be connected to city water and that an ordinance by the City of St. Louis prohibits the use of groundwater wells for drinking, fire suppression, or irrigation. (Various City of St. Louis sources believed that this ordinance was passed in the late 1800s, but the ordinance was not produced in a library search of City of St. Louis ordinances through 1900). Monitoring wells and test wells are not regulated by the City of St. Louis if they are installed on private property, and monitoring wells and test wells are permissible in city rights-of-way with a permit by the City of St. Louis. Personnel at the City of St. Louis declined to produce permits for wells drilled within city rights-of-way because there was no organization system to distinguish well permits from other right-of-way permits. Monitoring wells related to the Steelcote investigations have been abandoned. A high-capacity industrial well was installed within a block of the Steelcote facility in 1942, but has since been abandoned. A water well survey, conducted in the vicinity of the Steelcote facility, produced two water wells, used to wash trucks and equipment, within two blocks of the Steelcote facility (see Appendix B). These water wells, while they are located on an adjacent property, provide a complete pathway between the contaminated media and the worker or trespasser receptor.

Storm water provides another complete pathway to the worker and trespasser receptor. Cadmium exceeded the MCL but not the PRG, while benzene exceeded the PRG but not the MCL. Lead and methylene chloride exceeded both the MCL and the PRG. Because lead was detected in an upgradient storm water sample, Steelcote claimed an upgradient source of lead.

[3] Indirect Pathway/Receptor (e.g., vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc.)

4. Can the **exposures** from any of the complete pathways identified in #3 be reasonably expected to be **"significant"**[4] (i.e., potentially "unacceptable" because exposures can be reasonably

expected to be: 1) greater in magnitude (intensity, frequency and/or duration) than assumed in the derivation of the acceptable "levels" (used to identify the "contamination"); or 2) the combination of exposure magnitude (perhaps even though low) and contaminant concentrations (which may be substantially above the acceptable "levels") could result in greater than acceptable risks)?

__X__ If no (exposures can not be reasonably expected to be significant (i.e., potentially "unacceptable") for any complete exposure pathway) - skip to #6 and enter "YE" status code after explaining and/or referencing documentation justifying why the exposures (from each of the complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

_____ If yes (exposures could be reasonably expected to be "significant" (i.e., potentially "unacceptable") for any complete exposure pathway) - continue after providing a description (of each potentially "unacceptable" exposure pathway) and explaining and/or referencing documentation justifying why the exposures (from each of the remaining complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

_____ If unknown (for any complete pathway) - skip to #6 and enter "IN" status code

Rationale and Reference(s):

The complete exposure pathways (contaminated media - receptor combination) identified above include Worker and Storm Water or Groundwater, and Trespasser and Storm Water or Groundwater.

Trespassers and workers may come into contact with storm water during outdoor activities in low or draining areas of the site. While some contact (exposure) with the contaminants in site storm water can reasonably be expected, these exposures are not reasonably expected to be significant, that is, potentially "unacceptable," because (1) the duration (and intensity) of these exposures is very low, and (2) the concentrations of contaminants present are only slightly above the standards (which are based on assumptions of much higher exposure durations. Elevated concentrations of lead in storm water have been attributed to an off-site, upgradient source.

With regard to the groundwater exposure pathway, corrective action has been terminated at the site. No groundwater sampling has been conducted at the site since 1995, and all monitoring wells have been abandoned. The metals results used as a basis for terminating corrective action were from filtered samples that were not preserved properly. While a City of St. Louis ordinance prohibiting water well use for drinking, fire suppression, and irrigation appears to provide exposure control for this pathway, two water wells are located within two blocks of the Steelcote facility (see Appendix B). In spite of this, the applicable concentration reference level "standard" for identifying unacceptable exposures is the federal MCL or tap water PRG, which is based on an assumption of residential exposure. The exposure incurred

by trespassing or equipment washing is not expected to exceed 1 week per month for no more than 6 months per year.

[4] If there is any question on whether the identified exposures are "significant" (i.e., potentially "unacceptable") consult a human health Risk Assessment specialist with appropriate education, training and experience.

5. Can the "significant" **exposures** (identified in #4) be shown to be within **acceptable** limits?

_____ If yes (all "significant" exposures have been shown to be within acceptable limits) - continue and enter "YE" after summarizing and referencing documentation justifying why all "significant" exposures to "contamination" are within acceptable limits (e.g., a site-specific Human Health Risk Assessment).

_____ If no (there are current exposures that can be reasonably expected to be "unacceptable") continue and enter "NO" status code after providing a description of each potentially "unacceptable" exposure.

_____ If unknown (for any potentially "unacceptable" exposure) - continue and enter "IN" status code

Rationale and Reference(s):

6. Check the appropriate RCRIS status codes for the Current Human Exposures Under Control EI event code (CA725), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (and attach appropriate supporting documentation as well as a map of the facility):

__X__ YE - Yes, "Current Human Exposures Under Control" has been verified. Based on a review of the information contained in this EI Determination, "Current Human Exposures" are expected to be "Under Control" at the Steelcote Manufacturing Company facility , EPA ID # MOD006275036, located at One Steelcote Square, St. Louis, Missouri under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.

____ NO - "Current Human Exposures" are NOT "Under Control."

____ IN - More information is needed to make a determination.

Completed by (signature)_____ Date _____
John Delashmit
Unit Leader, RCRA Corrective Action & Permits Branch
EPA Region 7

Supervisor (signature)_____ Date _____
John Smith
Branch Chief, RCRA Corrective Action & Permits Branch
EPA Region 7

Locations where References may be found:

(1) Steelcote Facility, One Steelcote Square, St. Louis, Missouri

(2) EPA Region 7 Headquarters, RCRA Files, 901 North 5th Street, Kansas City, Kansas

(3) St. Louis Central Public Library, 1301 Olive Street, St. Louis, Missouri

Contact telephone and e-mail numbers:

John Delashmit
(913) 551-7821
delashmit.john@epa.gov

FINAL NOTE: THE HUMAN EXPOSURES EI IS A QUALITATIVE SCREENING OF EXPOSURES AND THE DETERMINATIONS WITHIN THIS DOCUMENT SHOULD NOT BE USED AS THE SOLE BASIS FOR RESTRICTING THE SCOPE OF MORE DETAILED (E.G., SITE-SPECIFIC) ASSESSMENTS OF RISK.

REFERENCES

Environmetrics. 1994. Laboratory Results from Soil and Groundwater Sampling at Steelcote Facility. October 14.

Shannon & Wilson, Inc. (S&W). 1992a. "Plan of Study, Steelcote Facility, St. Louis, Missouri." March 20.

S&W. 1992b. "Steelcote Facility Status Report for May 1992." June 12.

S&W. 1992c. "Steelcote Facility Second Quarter (August 1992) Groundwater Sample Analysis Results." September 10.

S&W. 1993a. "Steelcote Facility Third Quarter (November 1992) Groundwater Sample Analysis Results." January 6.

S&W. 1993b. "Steelcote Facility Fourth Quarter (February 1993) Groundwater Sample Analysis Results." March 15.

S&W. 1993c. "Steelcote Facility Status Report for June 1993." July 9.

S&W. 1993d. "Site Investigation Report, Steelcote Facility, St. Louis, Missouri." September 30.

S&W. 1993e. "Steelcote Facility Seventh Quarter (November 1993) Groundwater Sample Analysis Results." December 21.

S&W. 1994. "Monthly Status Report, Steelcote Facility, St. Louis, Missouri." September 9.

S&W. 1995a. "Monthly Status Report, Steelcote Facility, St. Louis, Missouri." February 14.

S&W. 1995b. "Monthly Status Report, Steelcote Facility, St. Louis, Missouri." April 7.

APPENDIX A

Johnson-Ettinger Models

DATA ENTRY SHEET

CALCULATE RISK-BASED SOIL CONCENTRATION (enter "X" in "YES" box)

VERSION 1.2
September, 1998

YES [ ]

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL SOIL CONCENTRATION (enter "X" in "YES" box and initial soil conc. below)

YES [X]

ENTER Chemical CAS No. (numbers only, no dashes)	**ENTER** Initial soil conc., C_R (µg/kg)	Chemical
108383	430	m-Xylene

ENTER Depth below grade to bottom of enclosed space floor, L_F (15 or 200 cm)	**ENTER** Depth below grade to top of contamination, L_t (cm)	**ENTER** Average soil temperature, T_S (°C)	**ENTER** Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	**ENTER** User-defined vadose zone soil vapor permeability, k_v (cm^2)
15	198	10	SIC		

ENTER Vadose zone soil dry bulk density, ρ_b^A (g/cm^3)	**ENTER** Vadose zone soil total porosity, n^V (unitless)	**ENTER** Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)	**ENTER** Vadose zone soil organic carbon fraction, f_{oc}^V (unitless)
1.5	0.43	0.3	0.002

ENTER Averaging time for carcinogens, AT_C (yrs)	**ENTER** Averaging time for noncarcinogens, AT_{NC} (yrs)	**ENTER** Exposure duration, ED (yrs)	**ENTER** Exposure frequency, EF (days/yr)	**ENTER** Target risk for carcinogens, TR (unitless)	**ENTER** Target hazard quotient for noncarcinogens, THQ (unitless)
70	30	25	250	1.0E-06	1
				Used to calculate risk-based soil concentration.	

RESULTS SHEET

RISK-BASED SOIL CONCENTRATION CALCULATIONS:

Indoor exposure soil conc., carcinogen (µg/kg)	Indoor exposure soil conc., noncarcinogen (µg/kg)	Risk-based indoor exposure soil conc., (µg/kg)	Soil saturation conc., C_{sat} (µg/kg)	Final indoor exposure soil conc., (µg/kg)
NA	NA	NA	1.65E+05	NA

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
NA	3.3E-06

DATA ENTRY SHEET

CALCULATE RISK-BASED GROUNDWATER CONCENTRATION (enter "X" in "YES" box)

YES	

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL GROUNDWATER CONCENTRATION
(enter "X" in "YES" box and initial groundwater conc. below)

YES	X

ENTER Chemical CAS No. (numbers only, no dashes)	**ENTER** Initial groundwater conc., C_W (µg/L)	Chemical
117840	72	Di-n-octyl phthalate

ENTER Depth below grade to bottom of enclosed space floor, L_F (15 or 200 cm)	**ENTER** Depth below grade to water table, L_{WT} (cm)	**ENTER** SCS soil type directly above water table	**ENTER** Average soil/ groundwater temperature, T_S (°C)
15	305	C	10

ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)		**ENTER** User-defined vadose zone soil vapor permeability, k_v (cm^2)	**ENTER** Vadose zone soil dry bulk density, ρ_b^V (g/cm^3)	**ENTER** Vadose zone soil total porosity, n^V (unitless)	**ENTER** Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)
SIC	OR		1.5	0.43	0.3

ENTER Target risk for carcinogens, TR (unitless)	**ENTER** Target hazard quotient for noncarcinogens, THQ (unitless)	**ENTER** Averaging time for carcinogens, AT_C (yrs)	**ENTER** Averaging time for noncarcinogens, AT_{NC} (yrs)	**ENTER** Exposure duration, ED (yrs)	**ENTER** Exposure frequency, EF (days/yr)
1.0E-06	1	70	30	25	250

Used to calculate risk-based groundwater concentration.

RESULTS SHEET

RISK-BASED GROUNDWATER CONCENTRATION CALCULATIONS:

Indoor exposure groundwater conc., carcinogen (µg/L)	Indoor exposure groundwater conc., noncarcinogen (µg/L)	Risk-based indoor exposure groundwater conc., (µg/L)	Pure component water solubility, S (µg/L)	Final indoor exposure groundwater conc., (µg/L)
NA	NA	NA	NA	NA

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
NA	1.8E-07

DATA ENTRY SHEET

CALCULATE RISK-BASED GROUNDWATER CONCENTRATION (enter "X" in "YES" box)

YES	

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL GROUNDWATER CONCENTRATION
(enter "X" in "YES" box and initial groundwater conc. below)

YES	X

ENTER Chemical CAS No. (numbers only, no dashes)	**ENTER** Initial groundwater conc., C_W (µg/L)	Chemical
108883	2000	Toluene

ENTER Depth below grade to bottom of enclosed space floor, L_F (15 or 200 cm)	**ENTER** Depth below grade to water table, L_{WT} (cm)	**ENTER** SCS soil type directly above water table	**ENTER** Average soil/ groundwater temperature, T_S (°C)
15	305	C	10

ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)		**ENTER** User-defined vadose zone soil vapor permeability, k_v (cm^2)	**ENTER** Vadose zone soil dry bulk density, ρ_b^v (g/cm^3)	**ENTER** Vadose zone soil total porosity, n^v (unitless)	**ENTER** Vadose zone soil water-filled porosity, θ_w^v (cm^3/cm^3)
SIC	OR		1.5	0.43	0.3

ENTER Target risk for carcinogens, TR (unitless)	**ENTER** Target hazard quotient for noncarcinogens, THQ (unitless)	**ENTER** Averaging time for carcinogens, AT_C (yrs)	**ENTER** Averaging time for noncarcinogens, AT_{NC} (yrs)	**ENTER** Exposure duration, ED (yrs)	**ENTER** Exposure frequency, EF (days/yr)
1.0E-06	1	70	30	25	250

Used to calculate risk-based groundwater concentration.

RESULTS SHEET

RISK-BASED GROUNDWATER CONCENTRATION CALCULATIONS:

Indoor exposure groundwater conc., carcinogen (µg/L)	Indoor exposure groundwater conc., noncarcinogen (µg/L)	Risk-based indoor exposure groundwater conc., (µg/L)	Pure component water solubility, S (µg/L)	Final indoor exposure groundwater conc., (µg/L)
NA	NA	NA	NA	NA

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
NA	2.7E-04

DATA ENTRY SHEET

CALCULATE RISK-BASED GROUNDWATER CONCENTRATION (enter "X" in "YES" box)

YES	

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL GROUNDWATER CONCENTRATION
(enter "X" in "YES" box and initial groundwater conc. below)

YES	X

ENTER Chemical CAS No. (numbers only, no dashes)	**ENTER** Initial groundwater conc., C_W (µg/L)	Chemical
108383	2100	m-Xylene

ENTER Depth below grade to bottom of enclosed space floor, L_F (15 or 200 cm)	**ENTER** Depth below grade to water table, L_{WT} (cm)	**ENTER** SCS soil type directly above water table	**ENTER** Average soil/ groundwater temperature, T_S (°C)
15	305	C	10

ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)		**ENTER** User-defined vadose zone soil vapor permeability, k_v (cm^2)	**ENTER** Vadose zone soil dry bulk density, ρ_b^V (g/cm^3)	**ENTER** Vadose zone soil total porosity, n^V (unitless)	**ENTER** Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)
SIC	OR		1.5	0.43	0.3

ENTER Target risk for carcinogens, TR (unitless)	**ENTER** Target hazard quotient for noncarcinogens, THQ (unitless)	**ENTER** Averaging time for carcinogens, AT_C (yrs)	**ENTER** Averaging time for noncarcinogens, AT_{NC} (yrs)	**ENTER** Exposure duration, ED (yrs)	**ENTER** Exposure frequency, EF (days/yr)
1.0E-06	1	70	30	25	250

Used to calculate risk-based groundwater concentration.

RESULTS SHEET

RISK-BASED GROUNDWATER CONCENTRATION CALCULATIONS:

Indoor exposure groundwater conc., carcinogen (µg/L)	Indoor exposure groundwater conc., noncarcinogen (µg/L)	Risk-based indoor exposure groundwater conc., (µg/L)	Pure component water solubility, S (µg/L)	Final indoor exposure groundwater conc., (µg/L)
NA	NA	NA	NA	NA

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
NA	1.5E-05

APPENDIX B

Well Location Report

WELL LOCATION REPORT
FOR
RISK ASSESSMENT ASSISTANCE
ENVIRONMENTAL INDICATOR FORM 725
STEELCOTE MANUFACTURING COMPANY

Prepared For:

U.S. Environmental Protection Agency
Region 7
901 North 5th Street
Kansas City, Kansas 66101

September 10, 2001

Prepared By:

Tetra Tech EM, Inc.
8030 Flint Street
Lenexa, Kansas 66214
(913) 894-2600

1.0 INTRODUCTION

Steelcote Manufacturing Company (Steelcote) is a manufacturing facility with a history of chemical use located at One Steelcote Square in St. Louis, Missouri (see Figure 1). Two compliance evaluation inspections (CEI) conducted at the Steelcote facility (site) provided the basis for a Resource Conservation and Recovery Act (RCRA) Section 3013 Administrative Order on Consent (AOC) issued to Steelcote on September 9, 1991. In response to the AOC, Steelcote submitted a Plan of Study (POS) to the U.S. Environmental Protection Agency (EPA) for review and approval. Seven soil borings were drilled at the site in response to the POS, and monitoring wells were installed in four of those borings. In addition, the facility also developed a site-specific list of contaminants of concern (COC) which were used for the first quarter of soil sampling and groundwater monitoring. According to the POS, groundwater sampling and analysis were to be conducted quarterly over a minimum of one year; however, any COC not detected during any quarterly sampling event could be removed from the sampling and analysis list.

The EPA is in the process of completing documentation of Environmental Indicator (EI) determination, in accordance with EPA Interim Final Guidance under RCRA Corrective Action, RCRA Information System (RCRIS) code CA725. This document is a determination of the quality of the environment relative to current human exposures to contamination and the migration of contaminated groundwater. In order to fully document the human exposure to contamination and the migration of contaminated water, it was necessary to identify all known wells and their uses within groundwater receptor range of the Steelcote facility.

This well location report describes the protocol by which well location information was obtained and the well information that was obtained. Supporting documentation is provided.

2.0 OBTAINING INFORMATION FROM PROPERTY OWNERS AND OCCUPANTS

Ms. Mary Grisolano, the EPA Work Assignment Manager (WAM), and Ms. Jessica Kidwell of Tetra

Tech EM Inc. (Tetra Tech) discussed the procedure for obtaining well information at the onset of the work assignment. The groundwater receptor range was provided by the EPA WAM, and was bounded approximately by Hickory Street to the south, Market Street to the north, Grand Boulevard to the west, and Compton Avenue to the east. A graphic presentation of the groundwater receptor range defined above is provided as Figure 2.

Because the city of St. Louis, Missouri, does not accept plat requests over the telephone, the EPA WAM sent a representative to St. Louis to obtain copies of property plats and accompanying information from the Assessor's Office. These documents were necessary in order to identify the property owners within the groundwater receptor range. Figure 2 shows the area of interest, as reconstructed from plat maps.

Tetra Tech used the assessor's information and various internet search engines to search for telephone numbers of the property owners and occupants. Internet search engines provided by the Southwestern Bell Yellow Pages and the Southwestern Bell White Pages extracted telephone numbers based on the property owner name, occupant name, or property address. Appendix A lists the property owners and occupants, their contact information, and other pertinent details. Where no telephone number is listed in Appendix A, no telephone number could be obtained using the information provided by the Assessor's Office of the City of St. Louis, Missouri.

The property owners and occupants were contacted by telephone and asked:

1. Are there, or have there ever been, any groundwater wells located on your property?
2. If so, where are they located?
3. If so, please provide (as applicable) the elevation, depth, screened interval(s), pumping rate, and projected well water usage for each well.
4. If there are active groundwater wells on your property, do you use the wells? For what purpose?
5. If there are abandoned wells on your property, do you have any documentation of abandonment procedures?

On September 4, 2001, Tetra Tech traveled to St. Louis to obtain information that could not be obtained over the telephone, and to research City of St. Louis ordinances. A photographic log of the site visit is provided as Appendix B.

3.0 ADDITIONAL SOURCES OF INFORMATION

In addition to contacting property owners and property occupants in order to locate wells, Tetra Tech contacted the following sources for information:

St. Louis County Department of Health, St. Louis, Missouri

Ms. Vanita Martin stated that the City of St. Louis passed an ordinance in the 1870's prohibiting the use of private wells for potable water inside the city limits. Ms. Martin stated that, to the best of her knowledge, there are no water wells within the City of St. Louis. Most wells are located near Wild Wood and Chesterfield, and a few wells are located in Fenton and Weldon Springs. The Environmental Laboratory for the St. Louis Department of Health analyzes water samples collected from wells determined by the Missouri Department of Natural Resources. Information regarding the private wells and associated laboratory analyses is private and confidential, however.

City of St. Louis Permits Department, St. Louis, Missouri

Bill, who declined to provide his last name, stated that there were no construction, demolition, or excavation permits issued for One Steelcote Square in St. Louis. Mr. Ron Brendel, the engineer for the permits department state that he was not aware of any water wells being drilled within city limits over the 20 years he's worked for the City of St. Louis.

City of St. Louis Street Department, St. Louis, Missouri

Anita stated that it was common to drill groundwater monitoring wells and test wells within City of St. Louis rights-of-way. She further stated, however, that a permit from the City of St. Louis was required

to complete this work. The Street Department declined to provide copies of these permits, as there was no organizational system to distinguish drilling permits from other street department permits.

City of St. Louis Department of Public Utilities, Water Division, St. Louis, Missouri

Mr. Dave Visintainer, Water Commissioner, stated that there were no drinking water, industrial, or irrigation wells located within the City of St. Louis, Missouri. Monitoring wells and test wells were permissible if drilled on private property or within permitted City of St. Louis rights-of-ways. Mr. Visintainer further stated that if residents of St. Louis owned property, they were required to be connected to public water. Alternative water systems required approval by the plumbing department and compliance with plumbing code and ordinances. Mr. Visintainer stated that he would provide the most current ordinance regulating water wells in the City of St. Louis; however, he has been unable to produce the document to date.

Missouri Department of Natural Resources (MDNR), Rolla, Missouri

Sharon Beistel at the MDNR Division of Geology and Land Survey (DGLS) conducted a database search for wells installed since 1987 in the well survey area of interest. Ms. Beistel noted that the database contained a number of monitoring well records for the St. Louis, Missouri, area. None of these wells, however, were installed within the well survey area of interest. Ms. Beistel also searched an older database, which produced one industrial high capacity well (see Appendix C) installed within the well survey area of interest in June of 1942. This well was located at 813 S. Theresa Street, property currently owned by Dennis Corrigan of Corrigan Company Mechanical Contractors, Inc. Mr. Corrigan was not available for comment. Discussions with June Corrigan and John McMann of Corrigan Company Mechanical Contractors, Inc. revealed this well is no longer in use. Ms. Corrigan and Mr. McMann were unable to provide any information about when or why the well was abandoned.

It should be noted that, prior to 1987, installation of water wells was reported to MDNR on a voluntary basis. Thus, the MDNR databases are an incomplete records of water well installations in St. Louis, Missouri.

4.0 FINDINGS

These findings reflect the September 2001 site visit and discussions with property owners, property occupants, and the above sources.

The following active and abandoned groundwater wells were discovered within the well survey area of interest:

- Steelcote Manufacturing Company, 1 Steelcote Square - eight abandoned monitoring wells
- 813 South Theresa Avenue - one abandoned industrial high capacity well
- 3225 Chouteau Avenue - two water supply wells

A RCRA Section 3013 Administrative Order on Consent dated 09/30/1991 required Steelcote to investigation contamination at its facility. Four monitoring wells (A, B, C, and D) were installed to monitor contamination in groundwater. When it was discovered that these wells had 45-foot screens, the wells were abandoned and four new monitoring wells (H, I, J, and K) were installed with 10-foot screens. Monitoring wells H through K were abandoned following termination of sampling on June 19, 1995.

Sharon Beistel at MDNR identified one industrial high capacity well in a database search of the well survey area of interest. The well is located at 813 South Theresa Avenue, an address corresponding to 3500 Gratiot Street on the 2212 block of St. Louis, Missouri. The 3500 Gratiot Street property is currently owned by Corrigan Company Mechanical Contractors, Inc. Discussions with June Corrigan and John McMann of Corrigan Company Mechanical Contractors, Inc. indicated that this well is no longer in use; however, Ms. Corrigan and Mr. McMann were unable to provide any information about when or why the well was abandoned. A log for this well is located in Appendix C.

Mr. Willie Young of St. Louis, Missouri, identified two groundwater supply wells with hand pumps at 3225 Chouteau Avenue. Mr. Young located one groundwater well toward the south end of the

property, and one well toward the north end of the property. Mr. Young stated that the wells were used for washing trucks and equipment; however, he could not provide construction details or dates of installation for either of the wells. Although Mr. Young rents the property at 3225 Chouteau Avenue from Mr. Pat., Mr. Young has always paid Mr. Pat in person and has no means of contacting him. Tetra Tech left contact information for Mr. Pat, but has received no reply to date.

APPENDIX A

Groundwater Well Survey

Property Address	Owner Address	Possible Phone Number	Property Type	Survey Results
City Block 1828				
3529 Hickory St	University Properties 221 N. Grand Blvd St Louis, MO 63103		Commercial	**1** A tolled parking lot for St. Louis University (SLU) students was identified at this address during a 09/04/2001 site visit. No wells were observed in a visual survey of the property.
City Block 1829				
3528-32 Chouteau Ave	CMC Extended Care Center Inc or Life Care POBox 723548 Atlanta, GA 31139	Life Care Center (314) 771-2100	Commercial	**2** Life Care Center, 3520 Chouteau, and an associated parking lot occupy the entire 1829 block, as identified in a 09/04/2001 site visit. Phillip Cherry of the Life Care Center maintenance department stated that there were no groundwater wells on the property.
3502-26 Chouteau Ave	Merritt Partnership 1525 South 8th St. St. Louis, MO 63104		Commercial	
City Block 2160				
3230 LaSalle St	SLU Treasurer's Office 3500 Lindell Blvd. St Louis, MO 63103	SLU Treasurer (314)977-2221 Facility Services (314) 577-8226 (314) 977-2955	Vacant Residential	**3** Paula Montgomery of the SLU Treasurer's Office stated that, to the best of her knowledge, none of the mid-city SLU properties have active or abandoned groundwater wells. Ms. Montgomery stated that most of the properties were once residential but are now vacant or parking lots. These statements also apply to Compton LLC, which is owned by SLU.

Property Address	Owner Address	Possible Phone Number	Property Type	Survey Results
3228 LaSalle St.	Land Reutilization Authority (LRA) 330 N. 15th St. St. Louis, MO 63103	LRA Real Estate (314) 622-3400 Dee Nickson-Harris, x389	Vacant Residential	**4** Ms. Nickson-Harris requested that Tetra Tech fax her the well survey and a list of the LRA properties in question; however, she did not respond to the questions in time to include them with this report. This address was identified as a vacant lot during a 09/04/2001 site visit, and no wells were observed in a visual survey of this property.
3226 LaSalle St.	SLU	SLU Treasurer (314)977-2221	Vacant Residential	See comment 3
3220-24 LaSalle St. Ex. 6 PII	[redacted]		Five Family Residential	**5** This address was identified as an occupied apartment building during a 09/04/2001 site visit, and no wells were observed. A group of people standing outside of the apartment building stated that they did not know of any water wells in the area.
3218 LaSalle St. Ex. 6 PII	[redacted]	[redacted]	Ex. 6 PII	
3212-3316 LaSalle St.	Compton Prop. LLC SLU Treasurer's Office 3500 Lindell Blvd St. Louis, MO 63103	SLU Treasurer (314)977-2221	Single Family Residential	See comment 3
1101-3 S. Compton Ave	SLU	SLU Treasurer (314)977-2221	Vacant Residential	See comment 3

Property Address	Owner Address	Possible Phone Number	Property Type	Survey Results
1105 S. Compton Ave	SLU	SLU Treasurer (314)977-2221	Vacant Residential	See comment 3
1109 S. Compton Ave	SLU	SLU Treasurer (314)977-2221	Vacant Residential	See comment 3
1111 S. Compton Ave	[redacted] Ex. 6 PII		Two Family Residential	**6** This address was identified as a residence during a 09/04/2001 site visit; however, the occupant was not present. No groundwater wells were observed in a visual survey of the property.
1113 S. Compton Ave	SLU	SLU Treasurer (314)977-2221	Vacant Residential	See comment 3
1115 S. Compton Ave	SLU	SLU Treasurer (314)977-2221	Vacant Residential	See comment 3
1117 S. Compton Ave	SLU	SLU Treasurer (314)977-2221	Vacant Residential	See comment 3
1121 S. Compton Ave	SLU	SLU Treasurer (314)977-2221	Vacant Residential	See comment 3
1123 S. Compton Ave	SLU	SLU Treasurer (314)977-2221	Vacant Residential	See comment 3
1125 S. Compton Ave	SLU	SLU Treasurer (314)977-2221	Vacant Residential	See comment 3
3215 Hickory St.	SLU	SLU Treasurer (314)977-2221	Vacant Residential	See comment 3

Property Address	Owner Address	Possible Phone Number	Property Type	Survey Results
3217 Hickory St.	SLU	SLU Treasurer (314)977-2221	Vacant Residential	See comment 3
3219 Hickory St.	LRA	LRA Real Estate (314) 622-3400 Dee Nickson-Harris, x389	Vacant Residential	See comment 4
3223 Hickory St.	City of St. Louis		Vacant Residential	7 This address was identified as a vacant lot during a 09/04/2001 site visit. No groundwater wells were observed in a visual survey of the property.
3225 Hickory St.	SLU	SLU Treasurer (314)977-2221	Vacant Residential	See comment 3
3227 Hickory St.	SLU	SLU Treasurer (314)977-2221	Vacant Residential	See comment 3
3229 Hickory St.	SLU	SLU Treasurer (314)977-2221	Vacant Residential	See comment 3
3231 Hickory St.	SLU	SLU Treasurer (314)977-2221	Vacant Residential	See comment 3
3233 Hickory St.	SLU	SLU Treasurer (314)977-2221	Vacant Residential	See comment 3
City Block 2161				
3230 Chouteau Av	Compton Prop. LLC	SLU Treasurer (314)977-2221	Vacant Residential	See comment 3

Property Address	Owner Address	Possible Phone Number	Property Type	Survey Results
3228 Chouteau Av	SLU	SLU Treasurer (314)977-2221	Vacant Residential	See comment 3
3224 Chouteau Av	SLU	SLU Treasurer (314)977-2221	Vacant Residential	See comment 3
3222 Chouteau Av	SLU	SLU Treasurer (314)977-2221	Vacant Residential	See comment 3
3220 Chouteau Av	SLU	SLU Treasurer (314)977-2221	Vacant Residential	See comment 3
3210-18 Chouteau Av	[redacted] Ex. 6 PII	Residents: [redacted]	Seven Family Residential Ex. 6 PII	See comment 5
3200 Chouteau Av	Ray P. Millard Jr, Kohar N. 1676 Grand Army Rd Labadie, MO 63055	Ray P. Millard [redacted] Ex. 6 PII	Commercial	8 Mr. Millard stated in a 08/28/2001 telephone conversation not aware of any active or abandoned groundwater wells on his properties.
3203-7 LaSalle St	Ray P. Millard Jr, Kohar N. 1676 Grand Army Rd Labadie, MO 63055	Ray P. Millard [redacted] Ex. 6 PII	Commercial	See comment 8

Property Address	Owner Address	Possible Phone Number	Property Type	Survey Results
3209 LaSalle St.	Ray P. Millard Jr, Kohar N. 1676 Grand Army Rd Labadie, MO 63055	Ray P. Millard (636) 742-2715	Vacant Residential	See comment 8
3211 LaSalle St.	Compton Prop. LLC	SLU Treasurer (314)977-2221	Vacant Residential	See comment 3
3213-15 LaSalle St.	Clyde Hudson 4106 W. Penrose St. Louis, MO 63115		Vacant Residential	See comment 7
3217-19 LaSalle St.	LRA	LRA Real Estate (314) 622-3400 Dee Nickson-Harris, x389	Two Family Residential	**9** Ms. Nickson-Harris requested that Tetra Tech fax her the well survey and a list of the LRA properties in question; however, she did not respond to the questions in time to include them with this report. This address was identified as an apartment building during a 09/04/2001 site visit; however, no residents were present. No groundwater wells were observed in a visual survey of the property.
3221 LaSalle St.	SLU	SLU Treasurer (314)977-2221	Vacant Residential	See comment 3
3225 LaSalle St.	[redacted] Ex. 6 PII	[redacted] Ex. 6 PII	Vacant Residential	**10** Ms. Thomas stated in a 08/28/2001 telephone conversation that she was not aware of any active or abandoned groundwater wells at this property address.

Property Address	Owner Address	Possible Phone Number	Property Type	Survey Results
3227 LaSalle St.	SLU	SLU Treasurer (314)977-2221	Vacant Residential	See comment 3
3229 LaSalle St.	SLU	SLU Treasurer (314)977-2221	Vacant Residential	See comment 3
3231 LaSalle St.	[redacted] Ex. 6 PII		Single Family Residential	See comment 6
3233 LaSalle St.	[redacted] Ex. 6 PII	[redacted] Ex. 6 PII	Three Family Residential	**10** This property was identified as an apartment building on a 09/04/2001 site visit; however, no residents were present. No groundwater wells were observed in a visual survey of the property.
City Block 2162				
3318-32 Chouteau Ave	Fair Oaks Co. Inc. c/o Sharon Hayes 12012 Carberry Pl St. Louis, MO 63131	CATCO (314) 772-9010 Sharon Hayes (314) 997-1343	Commercial	**11** This property was identified as the CATCO Catastrophe Cleaning & Restoration Company during a 09/04/2001 site visit. Sandy East stated that she knew of no groundwater wells, active or abandoned, on the property.
3300 Chouteau Ave	Badeeh A. Bander, Robert Mahfood, et al. 3300 Chouteau Ave. St. Louis, MO	Robert Mahfood (314) 638-5184	Commercial	**12** Mr. Mahfood stated that there were no groundwater wells, active or abandoned, on his properties.

Property Address	Owner Address	Possible Phone Number	Property Type	Survey Results
3301 LaSalle St.	Badeeh A. Bander, Robert Mahfood, et al. 3300 Chouteau Ave. St. Louis, MO	Robert Mahfood (314) 638-5184	Commercial	See comment 12
3333 LaSalle St.	Fair Oaks Co. c/o Sharon Hayes 34 Glen Eagles Dr St. Louis, MO 63124	Sharon Hayes (314) 997-1343	Commercial	**13** This property was identified as Wood Finish Technology during a 09/04/2001 site visit. The building was closed during the site visit; however, and no listing for this building were found in searches of telephone number directories. A visual survey of the exterior of this property revealed no groundwater wells.
City Block 2163				
3334 LaSalle St.	SLU	SLU Treasurer (314)977-2221	Vacant Residential	See comment 3
3332 LaSalle St.	Compton Prop. LLC	SLU Treasurer (314)977-2221	Vacant Residential	See comment 3
3330 LaSalle St.	Compton Prop. LLC	SLU Treasurer (314)977-2221	Vacant Residential	See comment 3
3328 LaSalle St.	SLU	SLU Treasurer (314)977-2221	Vacant Residential	See comment 3
3326 LaSalle St.	SLU	SLU Treasurer (314)977-2221	Vacant Residential	See comment 3

Property Address	Owner Address	Possible Phone Number	Property Type	Survey Results
3324 LaSalle St.	SLU	SLU Treasurer (314)977-2221	Vacant Residential	See comment 3
3322 LaSalle St.	Compton Prop. LLC	SLU Treasurer (314)977-2221	Two Family Residential	See comment 3
3320 LaSalle St.	SLU	SLU Treasurer (314)977-2221	Two Family Residential	See comment 3
3318 LaSalle St.	LRA	LRA Real Estate (314) 622-3400 Dee Nickson-Harris, x389	Two Family Residential	See comment 4
3312-16 LaSalle St.	SLU	SLU Treasurer (314)977-2221	Vacant Residential	See comment 3
3310 LaSalle St.	Carter Institutional Christian Methodist Episcopal Church TRS 3305 Hickory Street St Louis 63104	Carter Inst. CME Church (314) 428-9888	Vacant Residential	See comment 7
3308-10 LaSalle St.	Carter Institutional Christian Methodist Episcopal Church TRS	Carter Inst. CME Church (314) 428-9888	Vacant Residential	See comment 7
3304 LaSalle St.	[redacted] Ex. 6 PII		Two Family Residential	See comment 7

Property Address	Owner Address	Possible Phone Number	Property Type	Survey Results
3302 LaSalle St.	[redacted] Ex. 6 PII		Single Family Residential	See comment 7
3303-5 Hickory St.	Carter Institutional Christian Methodist Episcopal Church TRS	Carter Inst. CME Church (314) 428-9888	Commercial	**14** The Carter Institutional Christian Methodist Episcopal Church was identified at this address during a 09/04/2001 site visit. No one was present at the church during the site visit. No groundwater wells were identified during a visual survey of the property.
3307 Hickory St.	Carter Institutional Christian Methodist Episcopal Church TRS	Carter Inst. CME Church (314) 428-9888	Vacant Residential	See comment 7
3309-15 Hickory St.	Carter Institutional Christian Methodist Episcopal Church TRS	Carter Inst. CME Church (314) 428-9888	Vacant Residential	See comment 7
3317-19 Hickory St.	Carter Institutional Christian Methodist Episcopal Church TRS	Carter Inst. CME Church (314) 428-9888	Vacant Residential	See comment 7
3321-23 Hickory St.	Carter Institutional Christian Methodist Episcopal Church TRS	Carter Inst. CME Church (314) 428-9888	Vacant Residential	See comment 7

Property Address	Owner Address	Possible Phone Number	Property Type	Survey Results
3325 Hickory St.	LRA	LRA Real Estate (314) 622-3400 Dee Nickson-Harris, x389	Vacant Residential	See comment 4
3327-29 Hickory St.	[redacted] Ex. 6 PII	[redacted] Ex. 6 PII	Two Family Residential	**15** Mr. Jacobs stated, in an 08/29/2001 telephone conversation, that there were no active or abandoned groundwater wells on his property.
City Block 2170				
3434 LaSalle St.	Rising Star Missionary Baptist Church, Inc. 3424 LaSalle St. St. Louis, MO 63104	Rising Star Missionary Bapt. Church (314) 771-0179	Vacant Residential	**16** Mr. Sherman Glover stated, in a 09/04/2001 telephone conversation, that there were no groundwater wells on the Rising Star Missionary Baptist Church properties.
3422-32 LaSalle St.	Rising Star Missionary Baptist Church, Inc.	Rising Star Missionary Bapt. Church (314) 771-0179	Commercial	See comment 16
3414-18 LaSalle St.	Rising Star Missionary Baptist Church, Inc.	Rising Star Missionary Bapt. Church (314) 771-0179	Vacant Residential	See comment 16

Property Address	Owner Address	Possible Phone Number	Property Type	Survey Results
3412 LaSalle St.	Rising Star Missionary Baptist Church, Inc.	Rising Star Missionary Bapt. Church (314) 771-0179	Vacant Residential	See comment 16
3410 LaSalle St.	Rising Star Missionary Baptist Church, Inc.	Rising Star Missionary Bapt. Church (314) 771-0179	Commercial	See comment 16
3408 LaSalle St.	Rising Star Missionary Baptist Church, Inc.	Rising Star Missionary Bapt. Church (314) 771-0179	Vacant Residential	See comment 16
3406 LaSalle St.	Rising Star Missionary Baptist Church, Inc.	Rising Star Missionary Bapt. Church (314) 771-0179	Vacant Residential	See comment 16
3400-2 LaSalle St.	Rising Star Missionary Baptist Church, Inc.	Rising Star Missionary Bapt. Church (314) 771-0179	Vacant Residential	See comment 16
3403 Hickory St.	SLU	SLU Treasurer (314)977-2221	Vacant Residential	See comment 3

Property Address	Owner Address	Possible Phone Number	Property Type	Survey Results
3407 Hickory St.	[redacted] Ex. 6 PII		Vacant Residential	See comment 7
3411 Hickory St.	SLU	SLU Treasurer (314)977-2221	Vacant Residential	See comment 3
3413 Hickory St.	Compton Prop. LLC	SLU Treasurer (314)977-2221	Vacant Residential	See comment 3
3415 Hickory St. Ex. 6 PII	[redacted]	[redacted]	Single Family Residential	**17** Ms. Thurman, who rents the property, states that she knows of no groundwater well, active or abandoned, located at that address.
3417 Hickory St. Ex. 6 PII	[redacted]	Ex. 6 PII	Two Family Residential	See comment 10
3421 Hickory St.	LRA	LRA Real Estate (314) 622-3400 Dee Nickson-Harris, x389	Single Family Residential	**18** Ms. Nickson-Harris requested that Tetra Tech fax her the well survey and a list of the LRA properties in question; however, she did not respond to the questions in time to include them with this report. This address was identified as residence during a 09/04/2001 site visit; however, no residents were present. No groundwater wells were observed in a visual survey of the property.

Property Address	Owner Address	Possible Phone Number	Property Type	Survey Results
3423-26 Hickory St.	Rising Star Missionary Baptist Church, Inc.	Rising Star Missionary Bapt. Church (314) 771-0179	Vacant Residential	See comment 16
3425 Hickory St.	Rising Star Missionary Baptist Church, Inc.	Rising Star Missionary Bapt. Church (314) 771-0179	Vacant Residential	See comment 16
3427 Hickory St.	Compton Prop. LLC	SLU Treasurer (314)977-2221	Vacant Residential	See comment 3
3431 Hickory St.	[redacted] Ex. 6 PII		Single Family Residential	See comment 6
3433 Hickory St.	SLU	SLU Treasurer (314)977-2221	Vacant Residential	See comment 3
3435 Hickory St.	Rising Star Missionary Baptist Church, Inc.	Rising Star Missionary Bapt. Church (314) 771-0179	Vacant Residential	See comment 16

Property Address	Owner Address	Possible Phone Number	Property Type	Survey Results
City Block 2171				
3420-22 Chouteau Ave.	Rising Star Missionary Baptist Church, Inc.	Rising Star Missionary Bapt. Church (314) 771-0179	Commercial	See comment 16
3400 Chouteau Ave	Rising Star Missionary Baptist Church, Inc.	Rising Star Missionary Bapt. Church (314) 771-0179	Vacant Residential/ Commercial	See comment 16
3401 LaSalle St.	Rising Star Missionary Baptist Church, Inc.	Rising Star Missionary Bapt. Church (314) 771-0179	Commercial	See comment 16
3421 LaSalle St	Rising Star Missionary Baptist Church, Inc.	Rising Star Missionary Bapt. Church (314) 771-0179	Commercial	See comment 16
City Block 2172				
3568 Chouteau Ave	SLU	SLU Treasurer (314)977-2221	Commercial	See comment 3
3538-60 Chouteau Ave	SLU	SLU Treasurer (314)977-2221	Commercial	See comment 3

Property Address	Owner Address	Possible Phone Number	Property Type	Survey Results
City Block 2173				
1101-11 Carr Lane Ave	Sterling Lacquer Manufacturing Co. 3150 Brannon St. Louis, MO 63139	Leo Mitchell at Sterling Lacquer (314) 776-4450	Commercial	**18** Mr. Mitchell stated that, to the best of his knowledge, there were no active or abandoned groundwater wells on any of his properties. Mr. Mitchell stated that they had purchased the Carr Lane property 10 to 15 years ago, and the Edwin property about 30 years ago. All properties were unoccupied when purchased.
1111 Carr Lane Ave.	Sterling Lacquer Manufacturing Co.	Leo Mitchell at Sterling Lacquer (314) 776-4450	Vacant Residential	See comment 18
1112-26 S. Grand Blvd	Peerless Industries Inc 1124 S. Grand St. Louis, MO 63104	Peerless Restaurant Supplies (314) 772-9010	Commercial	**19** Ms. Jennifer White and other staff members at Peerless Restaurant Supplies knew of no active or abandoned groundwater wells at this address.
1100-10 S. Grand Blvd	SLU	SLU Treasurer (314)977-2221	Commercial	See comment 3
City Block 2208				
3500 Bernard St	Atlas Redevelopment PO Box 66838 St. Louis, MO 63166	Airgas (314) 533-3100 (800) 292-4404	Commercial	**20** This property was identified as Airgas during a 09/04/2001 site visit. Mr. Michael Stricklin stated that there were no water wells, active or abandoned, on the property.

Property Address	Owner Address	Possible Phone Number	Property Type	Survey Results
City Block 2209				
3560 Scott Ave	Bi-State Development 707 N. 1st St St. Louis, MO 63102	Bi-State (314) 982-1400 Teresa Rippy (314) 982-2246	Commercial	**21** During a 09/04/2001 site visit, this facility was identified as the Bi-State Main Repair Terminal for city buses. Ms. Rippy contacted various maintenance personnel and determined that there were no groundwater wells at the facility. Mr. Richard Morris and Mr. Larry Freeman added that there were no groundwater wells located on the Bi-State lightrail corridor within the area of interest.
3550 Scott Ave	Bi-State Development	Bi-State (314) 982-1400 Teresa Rippy (314) 982-2246	Commercial	See comment 21
3540 Scott Ave	Bi-State Development	Bi-State (314) 982-1400 Teresa Rippy (314) 982-2246	Commercial	See comment 21
3530 Scott Ave	Norfolk & Western Railway c/o Norfolk Southern Corp 110 Franklin Rd. SE Roanoke, VA 24042	Norfolk Southern Environmental, Peggy Faro (540) 981-4645	Commercial	**22** Discussions with Peggy Faro of the Norfolk Southern Environmental Department, Brian Sallie, St. Louis branch engineer, and Bill Jackson, St. Louis track supervisor, confirmed that there were no groundwater wells located on the Norfolk & Western railway corridor within the area of interest.

Property Address	Owner Address	Possible Phone Number	Property Type	Survey Results
3510 Scott Ave	Bi-State Development	Bi-State (314) 982-1400 Teresa Rippy (314) 982-2246	Commercial	See comment 21
603-5 S. Theresa Ave	Mendenhall Urban Development 600 S. Theresa Ave. St. Louis, MO 63101		Commercial	**23** During a 09/04/2001 site visit, Tom McClure and Matt Rigter of Mendenhall Rebuilders, Inc. stated that, to the best of their knowledge, there were no groundwater wells on their properties.
649 S. Theresa Ave	Bi-State Development	Bi-State (314) 982-1400 Teresa Rippy (314) 982-2246	Commercial	See comment 21
679 S. Theresa Ave.	Bi-State Development	Bi-State (314) 982-1400 Teresa Rippy (314) 982-2246	Commercial	See comment 21
699 S. Theresa Ave	Missouri Pacific Railroad		Commercial	**24** Missouri Pacific Railroad merged with Union Pacific Railroad and Western Pacific in 1982. See comment 22.
630 S. Grand Blvd	Norfolk & Western Railway	Norfolk Southern Environmental, Peggy Faro (540) 981-4645	Commercial	See comment 22

Property Address	Owner Address	Possible Phone Number	Property Type	Survey Results
600 S. Grand Blvd	Bi-State Development	Bi-State (314) 982-1400 Teresa Rippy (314) 982-2246	Commercial	See comment 21
City Block 2211				
3514 Atlantic St	June Marie Corrigan 816 S. Hanley Drive St. Louis, MO 63105	June Corrigan (314) 862-2123	Commercial	**25** Ms. Corrigan stated during a 08/28/2001 telephone conversation that there were no groundwater wells, active or abandoned, on any of the Corrigan properties.
3508-17 Atlantic St.	711 Theresa LLC 7724 Burr Oak Lane St. Louis, MO 63130	Tom Schneider at ISC (314) 776-1384	Commercial	**26** During a 09/04/2001 site visit, this property was identified as Inventory Sales Company (ISC). Mr. Schneider stated that, to the best of his knowledge, there were no active or abandoned groundwater wells on any of the ISC properties.
3505-13 Gratiot St.	711 Theresa LLC 7724 Burr Oak Lane St. Louis, MO 63130		Commercial	See comment 7.
3515 Gratiot St.	Billy P. Brewer, Goldie M. 3515 Gratiot St St. Louis, MO 63103	Billy and Goldie Brewer (314) 773-3882	Commercial	**27** The Brewers declined to comment during the telephone survey. During a 09/04/2001 site visit, this property was identified as an abandoned industrial or commercial warehouse. No groundwater wells were identified during a visual inspection of the property.

Property Address	Owner Address	Possible Phone Number	Property Type	Survey Results
3517 Gratiot St.	Billy P. Brewer, Goldie M. 3515 Gratiot St St. Louis, MO 63103	Billy and Goldie Brewer (314) 773-3882	Commercial	See comment 27.
3527 Gratiot St.	June Marie Corrigan 816 S. Hanley Drive St. Louis, MO 63105	June Corrigan (314) 862-2123	Commercial	See comment 25.
3535-45 Gratiot St.	Corrigan Company Mechanical Contractors 3545 Gratiot St. Louis, MO 63103	Corrigan Co. (314) 771-6200 June Corrigan (314) 862-2123	Commercial	**28** Mr. John McMann stated in a 08/28/2001 telephone conversation that there were no groundwater wells, active or abandoned, on the property. See comment 25.
City Block 2212				
3534-42 Gratiot St.	Bulk Leasing Inc. & McHugh Enterprise 3534 Gratiot St. Louis, MO 63103		Commercial	**29** During a 09/04/2001 site visit, this address was identified as a fenced, vacant lot containing parked vehicles. No groundwater wells were identified in a visual survey of the property.
3514 Gratiot St.	Kathryn Shirk Seidel Apartment 137 1 McKnight Place St. Louis, MO 63124	Julius Seidel & Company (314) 772-4000	Commercial	**30** Mr. Seidel stated in a 08/28/2001 telephone conversation that there were no groundwater wells, active or abandoned, on the property.
3500 Gratiot St.	c/o Dennis Corrigan 3545 Gratiot St. Louis, MO 63103	June Corrigan (314) 862-2123	Commercial	See comment 25

Property Address	Owner Address	Possible Phone Number	Property Type	Survey Results
3501 Papin St.	Eugene D Rudd, et al 3929 A Cleveland St. Louis, MO	Rudd residence (314) 865-2339	Commercial	**31** In a 08/28/2001 telephone conversation, Mrs. Rudd stated that Eugene Rudd was deceased and that the property was in the process of being sold to the property owner across the street (ISC, see comment 26). Mrs. Rudd knew of no groundwater monitoring wells on the property.
3505 Papin St.	L&C 3515 Property LLC PO Box 9106 St. Louis, MO 63117	Tom Schneider at ISC (314) 776-1384	Commercial	See comment 26.
3515-35 Papin St	L&C 3515 Property LLC PO Box 9106 St. Louis, MO 63117	Tom Schneider at ISC (314) 776-1384	Commercial	See comment 26.
City Block 2213				
3544-48 Papin St.	Patrick A. Hazzard, Elaine M. 4108 Healy Court St. Louis, MO 63123	Patrick Hazzard (314) 638-9278	Commercial	**32** The Hazzards did not respond to numerous phone calls and messages. During a 09/04/2001 site visit, this address was identified as a gravel truck and trailer parking lot. No groundwater monitoring wells were identified in a visual survey of the property.

Property Address	Owner Address	Possible Phone Number	Property Type	Survey Results
3540 Papin St.	Bulk Leasing Inc & McHugh Enterprise 3534 Gratiot Ave St. Louis, MO		Commercial	**33** During a 09/04/2001 site visit, this address was identified as a gravel parking lot, used by trucks and trailers, Drake's Bar, and The Complex nightclub. No groundwater wells were identified in a visual survey of the property.
3536 Papin St.	Howard W. Meyer 3511-15 Chouteau Ave. St. Louis, MO	Howard Myer (314) 849-5008	Commercial	See comment 33.
3528-34 Papin St.	Bulk Leasing Inc. & McHugh Enterprise 3534 Gratiot Ave. St. Louis, MO		Commercial	See comment 33.
3526-28 Papin St.	Alice Walls c/o Barbara Haley 1861 Cheltenham La Columbia, SC 29223		Commercial	See comment 33.
3522 Papin St	Howard W. Meyer	Howard Myer (314) 849-5008	Commercial	See comment 33.
3520 Papin St.	Howard W. Meyer	Howard Myer (314) 849-5008	Commercial	See comment 33.
3514 Papin St	Howard W. Meyer	Howard Myer (314) 849-5008	Commercial	See comment 33.

Property Address	Owner Address	Possible Phone Number	Property Type	Survey Results
3500-6 Papin St.	Howard W. Meyer	Howard Myer (314) 849-5008	Commercial	**34** During a 09/04/2001 site visit, this address was identified as Drake's Bar. The bar was closed; however, no wells were identified in a visual survey of the property.
3501-9 Chouteau Ave	Howard W. Meyer	Howard Myer (314) 849-5008	Commercial	**35** During a 09/04/2001 site visit, this address was identified as The Complex nightclub. The club was closed; however, no wells were identified in a visual survey of the property.
3511-15 Chouteau Ave	Howard W. Meyer	Howard Myer (314) 849-5008	Commercial	**36** During a 09/04/2001 site visit, this address was identified as a fenced sand volleyball court directly adjoining The Complex nightclub. See comment 35.
3527 Chouteau Ave	J. Michael Welch 2645 Metro Blvd Maryland Heights, MO 63043	Welch (636) 458-0820	Commercial	**37** During a 09/04/2001 site visit, this address was identified as E. J. Welch Company Floor Coverings & Supplies. Mr. Welch stated that he knew of no groundwater wells, active or abandoned, on his property.
3537 Chouteau Ave	Marvin Mueller, Elaine 13022 Ferncrest Ct. St. Louis, MO 63141	Marvin E. Mueller (314) 878-6968 Marvin Mueller (314) 867-6530	Commercial	**38** During an August 2001 telephone survey, neither Marvin Mueller listed in the telephone directory claimed to own this property. During a 09/04/2001 site visit, this address was identified as a Plumbing Supply store, advertised as "coming soon." The store was closed; however, no groundwater wells were identified during a visual survey of the property.

Property Address	Owner Address	Possible Phone Number	Property Type	Survey Results
3567 Chouteau Ave	Shoney Inc. c/o Rash 815-25-03304 PO Box 1600 Rowlett, TX 75088		Commercial	**39** During a 09/04/2001 site visit, this property was identified as a Rally's fast food restaurant. The store manager did not know of any groundwater wells, active or abandoned, on the property.
900-8 S. Grand Blvd	Patrick A Hazzard, Elaine M. 4108 Healy Ct. St. Louis, MO 63123		Commercial	**40** During a 09/04/2001 site visit, this property was identified as a Ryder truck rental facility. Ryder employees Kevin, Rick, and Jimmy knew of no groundwater wells, active or abandoned, on the property.
3539-49 Chouteau Ave	Grand Chouteau Estate LP, c/o Checkers PO Box 18800 Clearwater, FL 33762		Commercial	**41** During a 09/04/2001 site visit, this property was identified as a Captain D's Seafood fast food restaurant. Tiffany Boyd, a Captain D's Seafood employee, knew of no groundwater wells, active or abandoned, on the property.
City Block 2214				
900 S. Theresa Ave	Franklin J. Little, Lois J. 3401 Chouteau Ave. St. Louis, MO		Commercial	**42** During a 09/04/2001 site visit, this property was identified as a commercial or industrial building. The building was locked and had no identifying signs or markings. No groundwater wells were identified in a visual survey of the property.

Property Address	Owner Address	Possible Phone Number	Property Type	Survey Results
724-824 S. Theresa Ave	Multiplicity Products 3140 Park Ave St. Louis, MO 63104	Tom Schneider at ISC (314) 776-1384	Commercial	See comment 26.
710–20 S. Theresa Ave	Lindemann Industries 720 Theresa Ave St. Louis, MO 63103	Lindemann Industries, Inc. (314) 771-4141	Commercial	**43** During a 09/04/2001 site visit, this property was identified as Lindemann Industries, Inc., a high-pressure cleaning business. The building was locked; however, no groundwater wells were identified in a visual survey of the property.
708 S. Theresa Ave	Missouri Pacific Railroad Company		Commercial	See comment 24.
700 S. Theresa Ave	Bi-State Development	Bi-State (314) 982-1400 Teresa Rippy (314) 982-2246	Commercial	See comment 21.
2100-3740 Gratiot St.	Niedt Realty Co. 3418 Gratiot St. Louis, MO		Commercial	**44** This address is Steelcote Manufacturing Company. Eight groundwater monitoring wells associated with site investigations have been abandoned on the Steelcote Manufacturing Company property.
800-20 Edwin St.	Niedt Realty Co. 3418 Gratiot St. Louis, MO		Commercial	See comment 44.

Property Address	Owner Address	Possible Phone Number	Property Type	Survey Results
813 Ranken Ave	Paula L. Bussmann 14800 Sugarwood Chesterfield MO 63107	Paula Bussman (636) 532-4641	Commercial	**45** Mr. And Mrs. Bussman did not know of any groundwater wells, active or abandoned, on the property owned by Mrs. Bussman.
3401-7 Chouteau Ave	Franklin J. Little, Lois J. 3401 Chouteau Ave. St. Louis, MO		Commercial	**46** This address was identified as Wilkes Direct Mail during a 09/04/2001 site visit. A group of employees on break outside the facility stated that there were no groundwater wells on the property. See also comment 45.
	Paula L. Bussmann 14800 Sugarwood Chesterfield MO 63107	Paula Bussman (636) 532-4641		
3405 Chouteau Ave	Missouri Pacific Railroad Company		Commercial	See comment 24.
3417 Chouteau Ave	Franklin J. Little, Lois J.		Commercial	**47** This address was identified as an empty parking lot during a 09/04/2001 site visit. No groundwater wells were identified during a visual survey of the property.
3431 Chouteau Ave	Missouri Pacific Railroad Company		Commercial	See comment 24.
3435 Chouteau Ave	Franklin J. Little, Lois J.		Commercial	See comment 47.
3429 Papin St.	Franklin J. Little, Lois J.		Commercial	See comment 47.

Property Address	Owner Address	Possible Phone Number	Property Type	Survey Results
3419 Papin St.	Mel Kohl, Ruth A. 7 Steelcote Square St. Louis, MO	Mel & Ruth Kohl (636) 458-2395	Commercial	**48** During an 08/30/2001 telephone conversation, Mrs. Kohl stated that there were no wells, active or abandoned, located on their property.
801 Edwin St.	Niedt Realty Co. Steelcote Manufacturing Company Lessee 3418 Gratiot St. St. Louis, MO		Commercial	See comment 44.
3419 Gratiot St.	Niedt Realty Co.		Commercial	See comment 44.
City Block 2215				
698 S. Theresa Ave	Bi-State Development	Bi-State (314) 982-1400 Teresa Rippy (314) 982-2246	Commercial	See comment 21.
678 S. Theresa Ave	Norfolk & Western Railway	Norfolk Southern Environmental, Peggy Faro (540) 981-4645	Commercial	See comment 22.
674 S. Theresa Ave	Mendenhall Urban Redevelopment		Commercial	See comment 23.

Property Address	Owner Address	Possible Phone Number	Property Type	Survey Results
600 S. Theresa Ave	Mendenhall Urban Redevelopment		Commercial	See comment 23.
550 S. Theresa Ave	State of Missouri	Sharon Beistel MDNR (573) 368-2168	Commercial	**49** A visual survey of this property during a 09/04/2001 site visit revealed no groundwater wells, active or abandoned. The Missouri Department of Natural Resources knew of no groundwater wells, active or abandoned, at this address.
420 S. Theresa Ave	Leo V. Mitchell, Doris Jeanean c/o Sterling Chemical Coatings 3150 Brannon Ave St. Louis, MO 63139	Leo Mitchell at Sterling Lacquer (314) 776-4450	Commercial	See comment 18.
400 Edwin St.	RCI Industries Inc. 400 Edwin St. St. Louis, MO	Leo Mitchell at Sterling Lacquer (314) 776-4450	Commercial	**50** During a 09/04/2001 site visit, this address was identified as Manufacturers Steel Supply Company Inc. See comment
601 Edwin St.	H & F Properties 5012 Daggett Ave. St. Louis, MO 63110		Commercial	See comment 23.

Property Address	Owner Address	Possible Phone Number	Property Type	Survey Results
400-699 Edwin St.	Leo V. Mitchell, Doris Jeanean c/o Sterling Chemical Coatings	Leo Mitchell at Sterling Lacquer (314) 776-4450 Nick Obradovits at SESCO (314) 533-2157	Commercial	**51** See comment 18. During a 09/04/2001 site visit, Shower Enclosure Service Company (SESCO) was identified at 401 Edwin Street, and JPS Food Service was identified at 407 Edwin Street. Nick Obradovits of SESCO and Mindy Scrales of JPS Food Service stated that they knew of no groundwater wells, active or abandoned, on their properties.
City Block 2227				
3202 Market St.	State of Missouri	Sharon Beistel MDNR (573) 368-2168	Commercial	See comment 49.
City Block 2228				
3300-30 Spruce St.	Bi-State Development c/o Carpenter Outdoor Advertising Company 1302 Clarkson/ Clayton Center, Ste. 105 Ellisville MO 63011	Bi-State (314) 982-1400 Teresa Rippy (314) 982-2246	Commercial	See comment 21
City Block 2229				
3200-98 Bernard St.	Bi State Development	Bi-State (314) 982-1400 Teresa Rippy (314) 982-2246	Commercial	See comment 21

Property Address	Owner Address	Possible Phone Number	Property Type	Survey Results
City Block 2230				
3200-3398 Scott Ave	Bi State Development	Bi-State (314) 982-1400 Teresa Rippy (314) 982-2246	Commercial	See comment 21
City Block 2231				
32000 Atlantic St.	Bi State Development	Bi-State (314) 982-1400 Teresa Rippy (314) 982-2246	Commercial	See comment 21
3250 Atlantic St	Bi State Development	Bi-State (314) 982-1400 Teresa Rippy (314) 982-2246	Commercial	See comment 21
720 S. Compton Ave	Norfolk & Western Railway	Norfolk Southern Environmental, Peggy Faro (540) 981-4645	Commercial	See comment 22
740 S. Compton Ave	Missouri Pacific Railroad		Commercial	See comment 24
807 S. Compton Ave	Missouri Pacific Railroad		Commercial	See comment 24

Property Address	Owner Address	Possible Phone Number	Property Type	Survey Results
3201 Papin St.	Shirley Salant (TR) 328 Marmont Ct Chesterfield, MO 63017		Commercial	**52** During a 09/04/2001 site visit, this property was identified as an industrial or commercial storage facility with three garages and truck and trailer parking. The property was locked. No groundwater wells were identified in a visual survey of the property from adjacent roads.
900 Virginia Ave	Hamilcar Properties, Inc 19 Mel Nor Lane St. Louis, MO 63125		Commercial	**53** This property is located behind Madison County Wood Products at 3311 Chouteau Avenue. See comment 54.
902 Virginia Ave	Paula L. Bussman 14800 Sugarwood Chesterfield, MO 63017	Paula Bussman (636) 532-4641	Commercial	See comment 45.
721 Ranken Ave	Norfolk & Western Railway	Norfolk Southern Environmental, Peggy Faro (540) 981-4645	Commercial	See comment 22.
City Block 2233.18				
900 Ranken Ave	Paula L. Bussman	Paula Bussman (636) 532-4641	Commercial	See comment 45.
900 Virginia Ave	Hamilcar Properties, Inc.		Commercial	See comments 53 and 54.

Property Address	Owner Address	Possible Phone Number	Property Type	Survey Results
City Block 2234.18				
900 Ranken Ave	Paula L. Bussman	Paula Bussman (636) 532-4641	Commercial	See comment 45.
3205-13 Chouteau Ave	Shirley Salant (TR)		Commercial	See comment 52.
3225 Chouteau Ave	Hamilcar Properties, Inc.		Commercial	**54** This address was identified as Madison County Wood Products during a 09/04/2001 site visit. Mr. Willie Young, who rents the property, identified two water supply wells with pump handles at this address. One well is located at the south end of the property, and one well is located at the north end of the property. The wells are used for washing vehicles and equipment.
3235 Chouteau Ave	Paula L. Bussman	Paula Bussman (636) 532-4641	Commercial	See comment 45.
3301 Chouteau Ave	Paula L. Bussman	Paula Bussman (636) 532-4641	Commercial	See comment 45.
3325 Chouteau Ave	D L S Land Company c/o B. Shapiro 601 E. Red Bud St. Louis, MO 63147	Can Man Recycling (314) 773-1777	Commercial	**55** This address was identified as Can Man Recycling during a 09/04/2001 site visit. The property was locked and gated; however, no groundwater wells were identified during a visual survey of the property.

APPENDIX B

Photographic Log

PROJECT NO.	DESCRIPTION	One of two groundwater pumps at 3225 Chouteau Avenue, St. Louis, Missouri.	1
G00991R0781805FR	SITE NAME	Steelcote Manufacturing Company, St. Louis, Missouri	DATE
Direction: N	PHOTOGRAPHER	Jessica Kidwell	09/04/01

PROJECT NO.	DESCRIPTION	E. J. Welch Company, a floor covering distributor, 3527 Chouteau Avenue, St. Louis, Missouri.	2
G00991R0781805FR	SITE NAME	Steelcote Manufacturing Company, St. Louis, Missouri	DATE
Direction: W	PHOTOGRAPHER	Jessica Kidwell	09/04/01

PROJECT NO.	DESCRIPTION	Life Care Center, 3502 Chouteau, St. Louis, Missouri.	3
G00991R0781805FR	SITE NAME	Steelcote Manufacturing Company, St. Louis, Missouri	DATE
Direction: SE	PHOTOGRAPHER	Jessica Kidwell	09/04/01

PROJECT NO.	DESCRIPTION	The Complex, a nightclub with sand volleyball courts (fenced to right of club), 3515 Chouteau, St. Louis, Missouri.	4
G00991R0781805FR	SITE NAME	Steelcote Manufacturing Company, St. Louis, Missouri	DATE
Direction: NE	PHOTOGRAPHER	Jessica Kidwell	09/04/01

PROJECT NO.	DESCRIPTION	Parking lot for students of St. Louis University, 3529 Hickory, St. Louis, Missouri.	5
G00991R0781805FR	SITE NAME	Steelcote Manufacturing Company, St. Louis, Missouri	DATE
Direction: E	PHOTOGRAPHER	Jessica Kidwell	09/04/01

PROJECT NO.	DESCRIPTION	Peerless Restaurant Supplies, 1112 Hickory, St. Louis, Missouri.	6
G00991R0781805FR	SITE NAME	Steelcote Manufacturing Company, St. Louis, Missouri	DATE
Direction: S	PHOTOGRAPHER	Jessica Kidwell	09/04/01

PROJECT NO.	DESCRIPTION	Captain D's Seafood and Rally's restaurant, 3539 Chouteau and 3567 Chouteau, St. Louis, Missouri. Vacant block 2172 visible in foreground.	7
G00991R0781805FR	SITE NAME	Steelcote Manufacturing Company, St. Louis, Missouri	DATE
Direction: N	PHOTOGRAPHER	Jessica Kidwell	09/04/01

PROJECT NO.	DESCRIPTION	Plumbing supply store (coming soon), 3537 Chouteau, St. Louis, Missouri.	8
G00991R0781805FR	SITE NAME	Steelcote Manufacturing Company, St. Louis, Missouri	DATE
Direction: N	PHOTOGRAPHER	Jessica Kidwell	09/04/01

PROJECT NO.	DESCRIPTION	Can Man Recycling, 3325 Chouteau, St. Louis, Missouri.	9
G00991R0781805FR	SITE NAME	Steelcote Manufacturing Company, St. Louis, Missouri	DATE
Direction: N	PHOTOGRAPHER	Jessica Kidwell	09/04/01

PROJECT NO.	DESCRIPTION	Madison County Wood Products, 3311 Chouteau, St. Louis, Missouri.	10
G00991R0781805FR	SITE NAME	Steelcote Manufacturing Company, St. Louis, Missouri	DATE
Direction: NNE	PHOTOGRAPHER	Jessica Kidwell	09/04/01

PROJECT NO.	DESCRIPTION	Truck and trailer parking, and parking lot behind The Complex nightclub and Drakes Bar, 3514-3544 Papin Street, St. Louis, Missouri.	11
G00991R0781805FR	SITE NAME	Steelcote Manufacturing Company, St. Louis, Missouri	DATE
Direction: W	PHOTOGRAPHER	Jessica Kidwell	09/04/01

PROJECT NO.	DESCRIPTION	Inventory Sales Company (ISC), location one of three, 724 Theresa, St. Louis, Missouri.	12
G00991R0781805FR	SITE NAME	Steelcote Manufacturing Company, St. Louis, Missouri	DATE
Direction: NE	PHOTOGRAPHER	Jessica Kidwell	09/04/01

PROJECT NO.	DESCRIPTION	ISC, location two of three, 3515 Papin, St. Louis, Missouri.	13
G00991R0781805FR	SITE NAME	Steelcote Manufacturing Company, St. Louis, Missouri	DATE
Direction: NW	PHOTOGRAPHER	Jessica Kidwell	09/04/01

PROJECT NO.	DESCRIPTION	ISC, location three of three, 3508 Theresa, St. Louis, Missouri.	14
G00991R0781805FR	SITE NAME	Steelcote Manufacturing Company, St. Louis, Missouri	DATE
Direction: W	PHOTOGRAPHER	Jessica Kidwell	09/04/01

PROJECT NO.	DESCRIPTION	Julius Seidel & Company, 3514 Gratiot, St. Louis, Missouri.	15
G00991R0781805FR	SITE NAME	Steelcote Manufacturing Company, St. Louis, Missouri	DATE
Direction: W	PHOTOGRAPHER	Jessica Kidwell	09/04/01

PROJECT NO.	DESCRIPTION	Lindemann Industries, Inc., high-pressure commercial mobile cleaning, 720 Theresa Avenue, St. Louis, Missouri.	16
G00991R0781805FR	SITE NAME	Steelcote Manufacturing Company, St. Louis, Missouri	DA TE
Direction: SE	PHOTOGRAPHER	Jessica Kidwell	09/04/01

PROJECT NO.	DESCRIPTION	Wilkes Direct Mail, 3405 Chouteau Avenue, St. Louis, Missouri.	17
G00991R0781805FR	SITE NAME	Steelcote Manufacturing Company, St. Louis, Missouri	DATE
Direction: NNW	PHOTOGRAPHER	Jessica Kidwell	09/04/01

PROJECT NO.	DESCRIPTION	CATCO Catastrophe Cleaning & Restoration Company, 3318 Chouteau, St. Louis, Missouri.	18
G00991R0781805FR	SITE NAME	Steelcote Manufacturing Company, St. Louis, Missouri	DATE
Direction: E	PHOTOGRAPHER	Jessica Kidwell	09/04/01

PROJECT NO.	DESCRIPTION	Fenced parking lot behind CATCO, 3318 Chouteau, St. Louis, Missouri.	19
G00991R0781805FR	SITE NAME	Steelcote Manufacturing Company, St. Louis, Missouri	DATE
Direction: NE	PHOTOGRAPHER	Jessica Kidwell	09/04/01

PROJECT NO.	DESCRIPTION	Wood Finish Technology, 3333 La Salle Street, St. Louis, Missouri.	20
G00991R0781805FR	SITE NAME	Steelcote Manufacturing Company, St. Louis, Missouri	DATE
Direction: NNE	PHOTOGRAPHER	Jessica Kidwell	09/04/01

PROJECT NO.	DESCRIPTION	Fenced parking lot behind Wood Finish Technology, 3333 La Salle Street, St. Louis, Missouri.	21
G00991R0781805FR	SITE NAME	Steelcote Manufacturing Company, St. Louis, Missouri	DATE
Direction: SE	PHOTOGRAPHER	Jessica Kidwell	09/04/01

PROJECT NO.	DESCRIPTION	Vacant portion of block 2163, St. Louis, Missouri. This block is vacant with the exception of 3304 La Salle Street.	22
G00991R0781805FR	SITE NAME	Steelcote Manufacturing Company, St. Louis, Missouri	DATE
Direction: SW	PHOTOGRAPHER	Jessica Kidwell	09/04/01

PROJECT NO.	DESCRIPTION	Residence, 3304 La Salle Street, St. Louis, Missouri.	23
G00991R0781805FR	SITE NAME	Steelcote Manufacturing Company, St. Louis, Missouri	DATE
Direction: S	PHOTOGRAPHER	Jessica Kidwell	09/04/01

PROJECT NO.	DESCRIPTION	Church at the northeast corner of Virginia Avenue and Hickory Street, 3303 Hickory, St. Louis, Missouri.	24
G00991R0781805FR	SITE NAME	Steelcote Manufacturing Company, St. Louis, Missouri	DATE
Direction: NNW	PHOTOGRAPHER	Jessica Kidwell	09/04/01

PROJECT NO.	DESCRIPTION	View of block 2160 (foreground) and block 2161 (background), St. Louis, Missouri. Apartment buildings visible at 3220 and 3231-3233 La Salle.	25
G00991R0781805FR	SITE NAME	Steelcote Manufacturing Company, St. Louis, Missouri	DATE
Direction: N	PHOTOGRAPHER	Jessica Kidwell	09/04/01

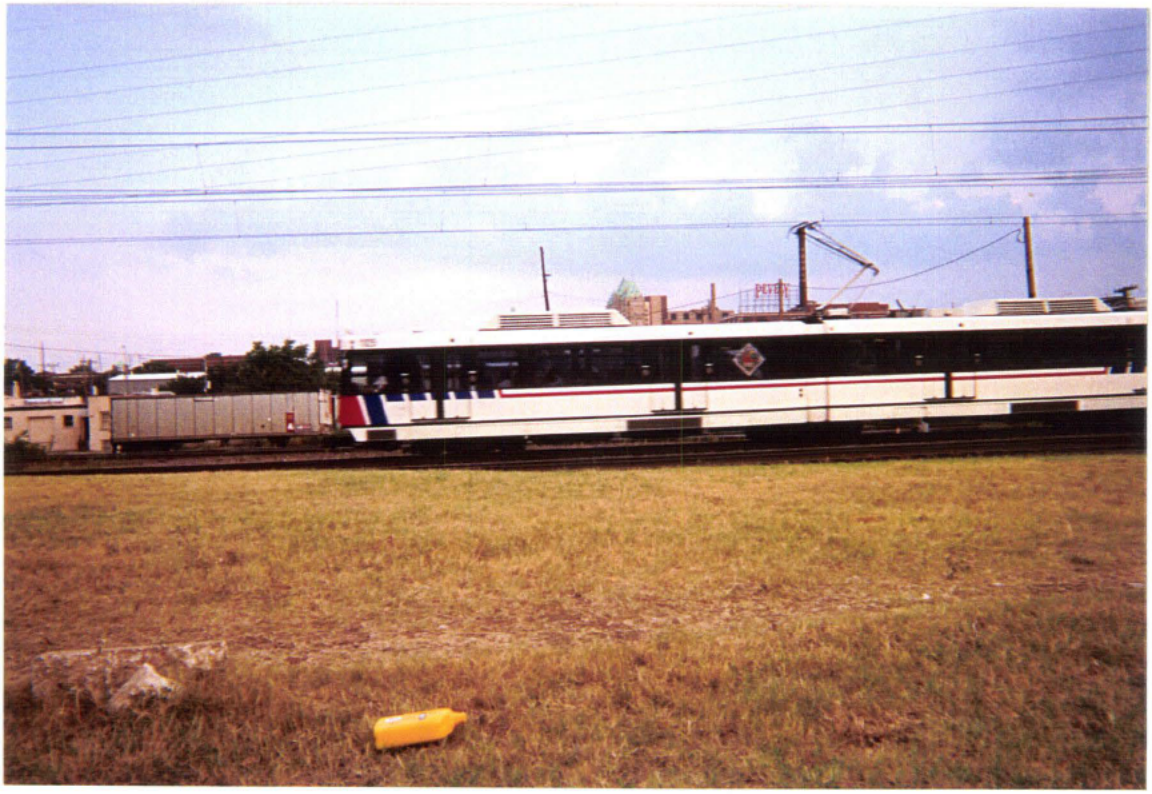
PROJECT NO.	DESCRIPTION	Industrial lot at 3205 Chouteau, St. Louis, Missouri.	26
G00991R0781805FR	SITE NAME	Steelcote Manufacturing Company, St. Louis, Missouri	DATE
Direction: N	PHOTOGRAPHER	Jessica Kidwell	09/04/01

PROJECT NO.	DESCRIPTION	Entrance to Bi-State Main Repair Terminal for St. Louis bus and lightrail system, blocks 228-230, St. Louis, Missouri.	27
G00991R0781805FR	SITE NAME	Steelcote Manufacturing Company, St. Louis, Missouri	DATE
Direction: West	PHOTOGRAPHER	Jessica Kidwell	09/04/01

PROJECT NO.	DESCRIPTION	Manufactured Steel, 400 Edwin Street, St. Louis, Missouri.	28
G00991R0781805FR	SITE NAME	Steelcote Manufacturing Company, St. Louis, Missouri	DATE
Direction: S	PHOTOGRAPHER	Jessica Kidwell	09/04/01

PROJECT NO.	DESCRIPTION	JPS Food Services (left) and Shower Enclosure Service Company (SESCO; right), 405 and 401 Edwin Street, St. Louis, Missouri.	29
G00991R0781805FR	SITE NAME	Steelcote Manufacturing Company, St. Louis, Missouri	DATE
Direction: SW	PHOTOGRAPHER	Jessica Kidwell	09/04/01

PROJECT NO.	DESCRIPTION	Mendenhall Rebuilders, Inc., 600 Theresa Avenue, St. Louis, Missouri.	30
G00991R0781805FR	SITE NAME	Steelcote Manufacturing Company, St. Louis, Missouri	DATE
Direction: S	PHOTOGRAPHER	Jessica Kidwell	09/04/01



PROJECT NO.	DESCRIPTION	Bi-State lightrail and UPRR railroad lines, south of Scott Avenue, between Grand Boulevard and Theresa Avenue, St. Louis, Missouri.	31
G00991R0781805FR	SITE NAME	Steelcote Manufacturing Company, St. Louis, Missouri	DATE
Direction: S	PHOTOGRAPHER	Jessica Kidwell	09/04/01

PROJECT NO.	DESCRIPTION	Bi-State lightrail terminal, south of Scott Avenue near Grand Boulevard, St. Louis, Missouri.	32
G00991R0781805FR	SITE NAME	Steelcote Manufacturing Company, St. Louis, Missouri	DATE
Direction: SW	PHOTOGRAPHER	Jessica Kidwell	09/04/01

PROJECT NO.	DESCRIPTION	Airgas, compressed gas distributor, 3500 Scott Avenue, St. Louis, Missouri.	33
G00991R0781805FR	SITE NAME	Steelcote Manufacturing Company, St. Louis, Missouri	DATE
Direction: NW	PHOTOGRAPHER	Jessica Kidwell	09/04/01

PROJECT NO.	DESCRIPTION	Airgas, compressed gas distributor, 3500 Scott Avenue, St. Louis, Missouri.	34
G00991R0781805FR	SITE NAME	Steelcote Manufacturing Company, St. Louis, Missouri	DATE
Direction: NE	PHOTOGRAPHER	Jessica Kidwell	09/04/01

APPENDIX C

Industrial Well Log

813 South Theresa Avenue

DNR MISSOURI SAMPLE WELL-LOG LIBRARY DGLS

LOG NUMBER
007923

OWNER: ACETYLENE GAS CO
PLUGGED N CONFIDENTIAL? 0 RELEASE DATE:
WELL TYPE: Industrial High Capacity Well
DRILLER: BUTLER, M.
LEASENAME:
DRILL DATE: 194206 PERMIT #:
LOGGER: GOTT LOGDATE: 194209
TYPE OF LOG: S SAMPLE SAVED? 0

MISSOURI , COUNTY: St. Louis City
SECTION: 21 TOWNSHIP: 45 N RANGE 07 E
SW of SW of NE
LATITUDE: 38.62338
LONGITUDE: -90.2308
QUAD NAME: CAHOKIA

OTHER DATABASES:
ID NUMBER:
DATABASE 2:
ID NUMBER:
DATABASE 3
ID NUMBER

ELEVATION: 460 BASE: S BEDROCK @ 63 FEET
TOTAL DEPTH: 400 INTERVAL CORED: 0 TO 0
YIELD: 20 DRAWDOWN: 300
STATIC WATER LEVEL BEFORE: AFTER: 63

WATER AT: TLT

TOP FORMATION: SALEM FORMATION
BOTTOM FORMATION: FERN GLEN FORMATION

REMARKS: 2 BLKS NE OF GRAND & CHEROKEE, 813 S. THERESA ST

CONSTRUCTION DATA

	DEPTH:	DIAMETER	CASING MATERIAL
CASING:	69	8	
	0	0	
	0	0	I/O: O
	0	0	SIZE HOLE: 0

DATE PLUGGED: DATE ABANDONED:
Plug Depth TOP: 0 Plug Depth Bottom: 0
GROUTING:

PUMP: Capacity 0 | Pump Type | Set at: 0 Total Depth: 0 | Screen Type: | Size: 0 Length: 0 Slot: 0

Well Treatment: Type Devised: Type of Completion
Oil Production: Gas Production:
Perforation Interval: Top: 0 Bottom: 0
Tube Pressure:

Water Analysis:

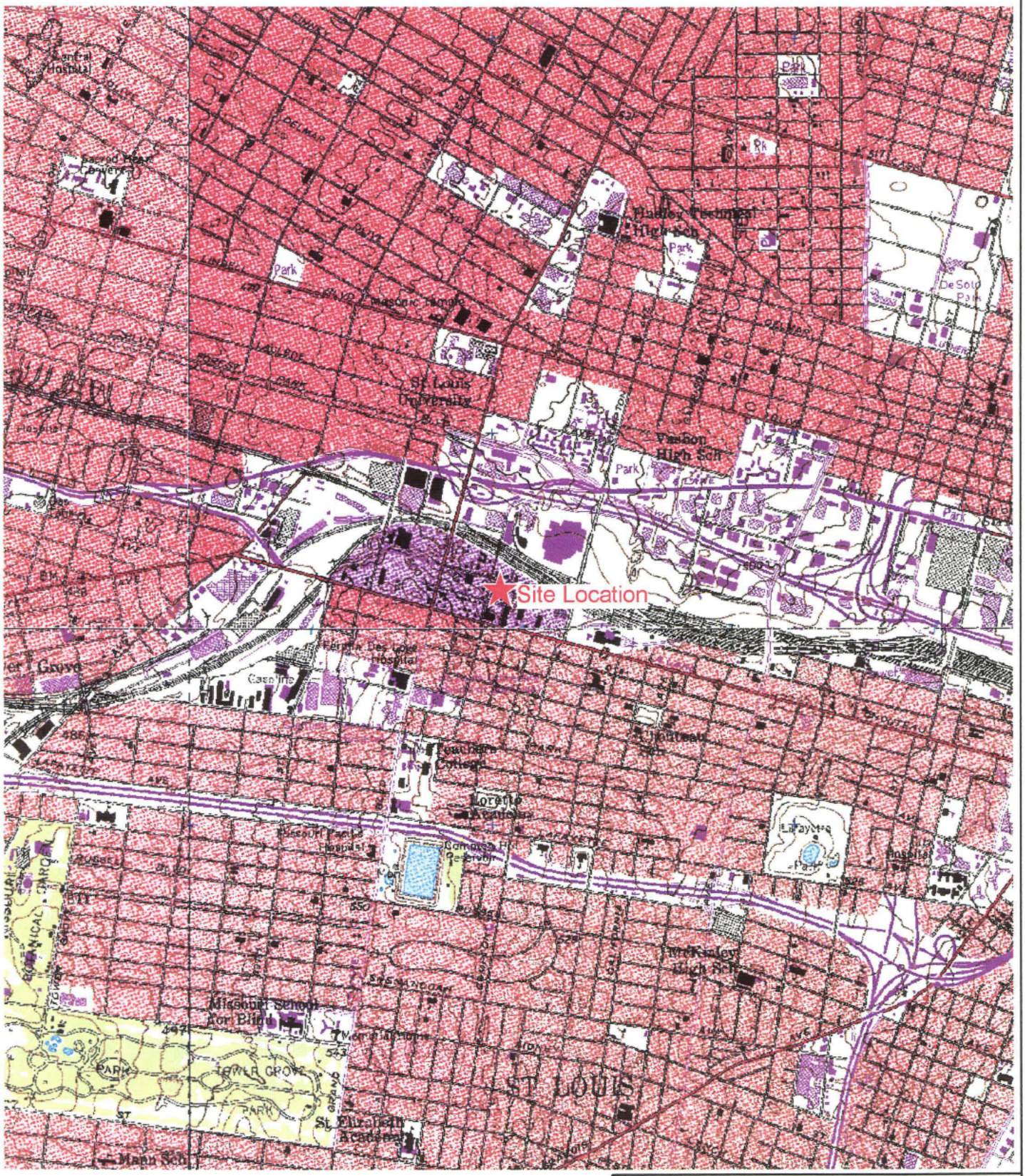
OPEN FORMATIONS Top Formation: SALEM FORMATION
Bottom Formation: FERN GLEN FORMATION

LOG NUMBER
007923

STRATIGRAPHY

TOP	BOT	FORMATION NAME	LITHOLOGY PRIMARY	LITHOLOGY SECONDARY	LITHOLOGY MINOR	MINERALS PRIMARY	occ.	MINERALS SECONDAR	occ	MINOR
0	63	NO SAMPLES					0		0	
63	400	MISSISSIPPIAN SYSTEM					0		0	
63	235	MERAMECIAN SERIES					0		0	
63	140	SALEM FORMATION	LIMESTONE		CHERT		0		0	
63	140	SALEM FORMATION	LIMESTONE		CHERT		0		0	
140	235	WARSAW FORMATION	SHALE	LIMESTONE	CHERT		0		0	
235	400	OSAGEAN SERIES					0		0	
235	395	KEOKUK-BURLINGTON LS. UNDIFF	CHERT	LIMESTONE			0		0	
395	400	FERN GLEN FORMATION	SHALE	CHERT			0		0	
400	400	TOTAL DEPTH					0		0	

FIGURES



Not to Scale

REPA EI - Steelcote
St. Louis, Missouri

Figure 1
Site Location Map

Tetra Tech EM Inc.

Source: USGS St. Louis East, MO 7.5 minute Topo Quad

Date: 9/04/01 Drawn By: Roger Stull Project No: G0099.1.R07.8.18.05.FR

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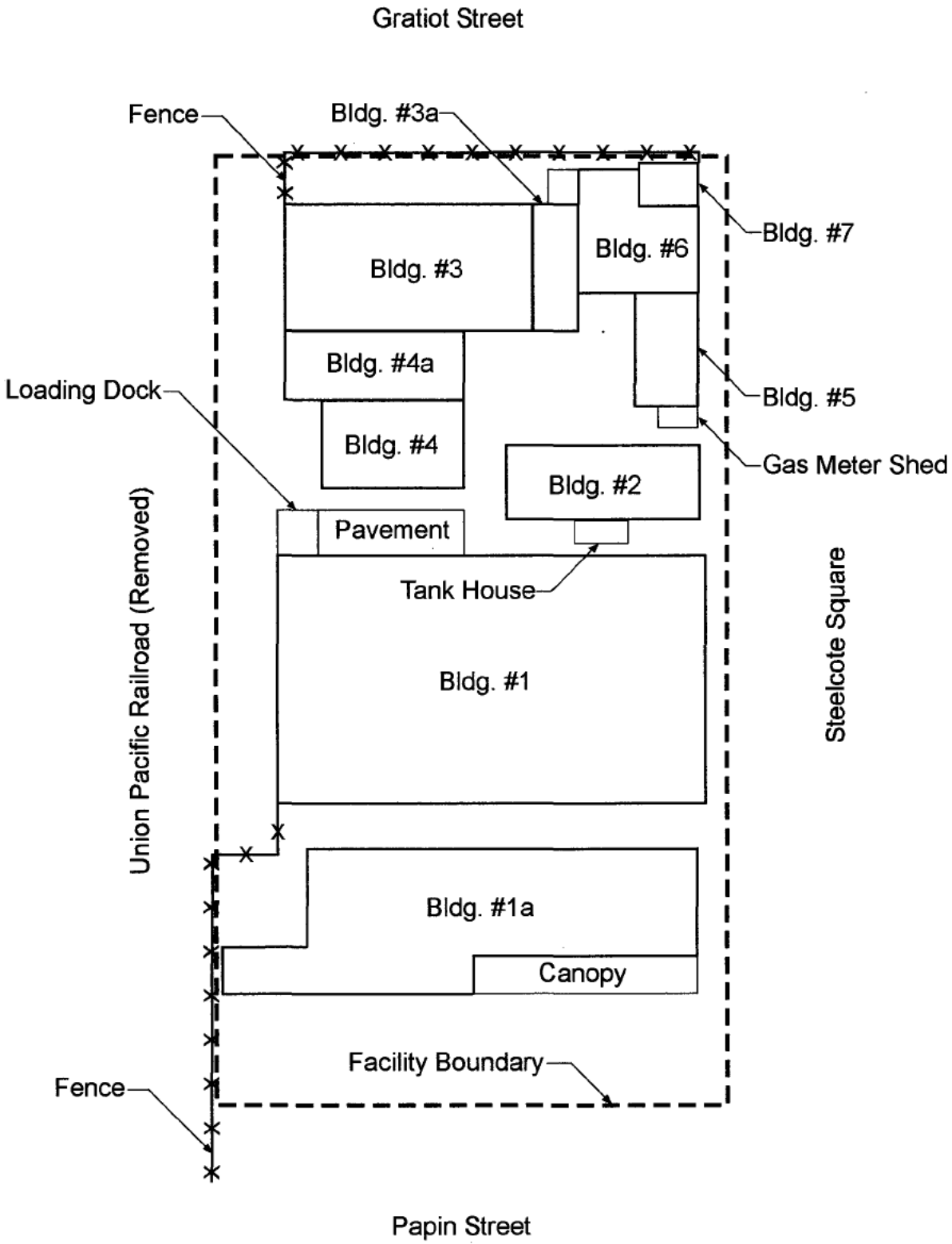


REPA EI - Steelcote
St. Louis, Missouri

Figure 2
Site Layout Map

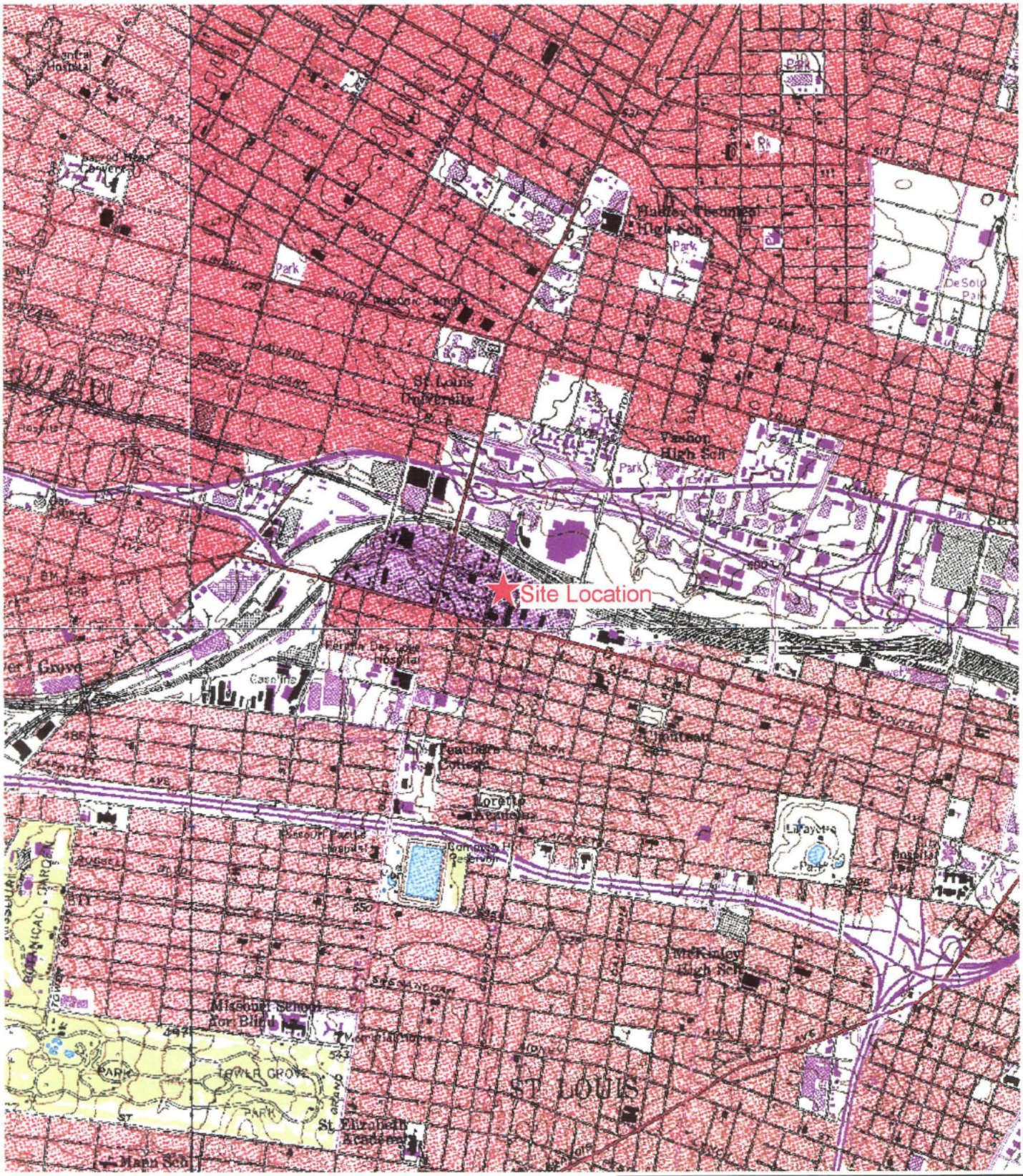
Tetra Tech EM Inc.

Date: 9/04/01 Drawn By: Roger Stull Project No: G0099.1.R07.8.18.05.FR

Source: Shannon & Wilson, Inc.

S:/PROJECTS/REPA 2-8 (G0099)/R07/818-Env Indicators/Steelcote/Figures/Figure 2.FH10

FIGURES



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Not to Scale

REPA EI - Steelcote
St. Louis, Missouri

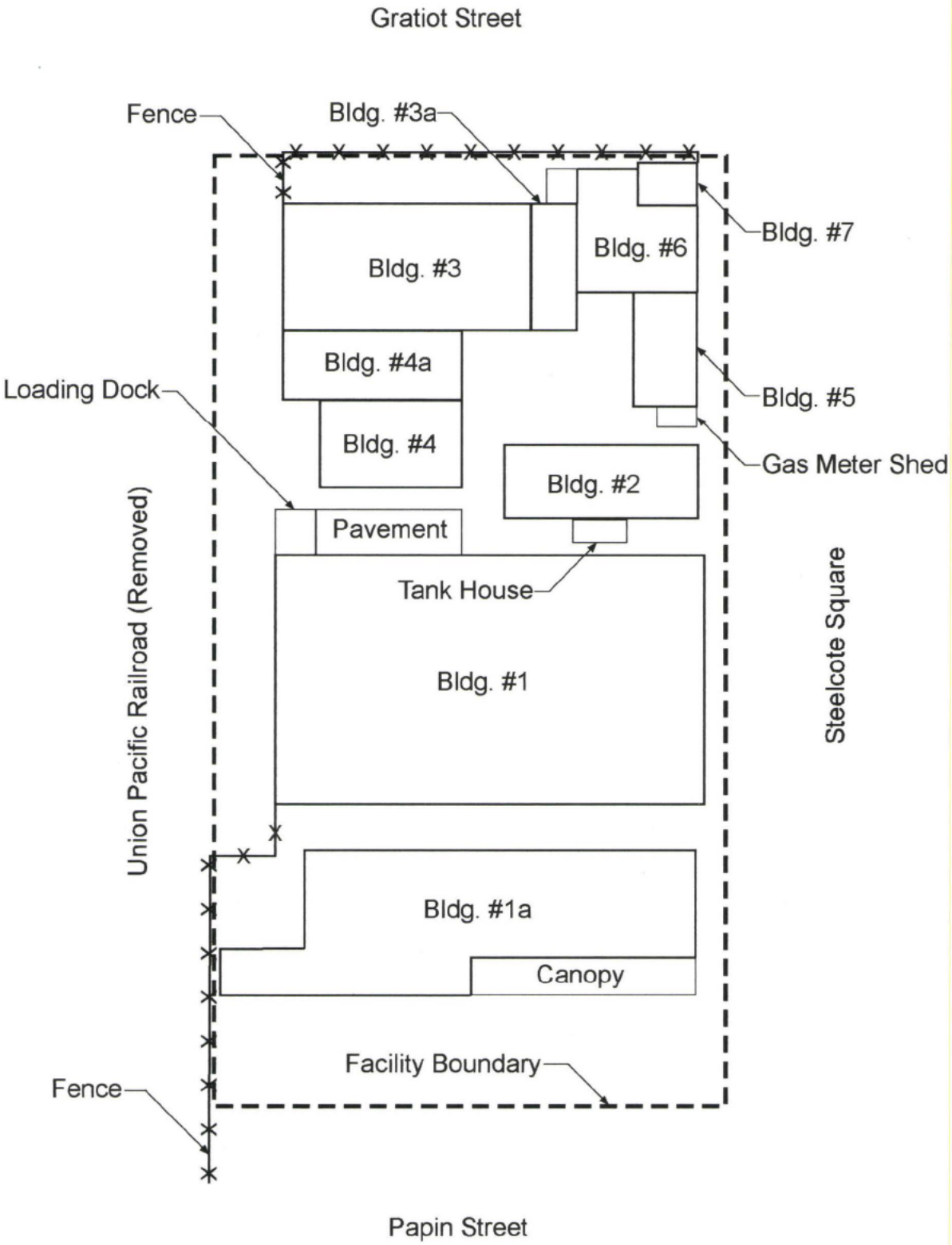
Figure 1
Site Location Map

Tetra Tech EM Inc.

Source: USGS St. Louis East, MO 7.5 minute Topo Quad

Date: 9/04/01 Drawn By: Roger Stull Project No: G0099.1.R07.8.18.05.FR

S:/PROJECTS/REPA 2-8 (G0099)/R07/818-Env Indicators/Steelcote/Figures/Figure 1.FH10



Steelcote
St. Louis, Missouri

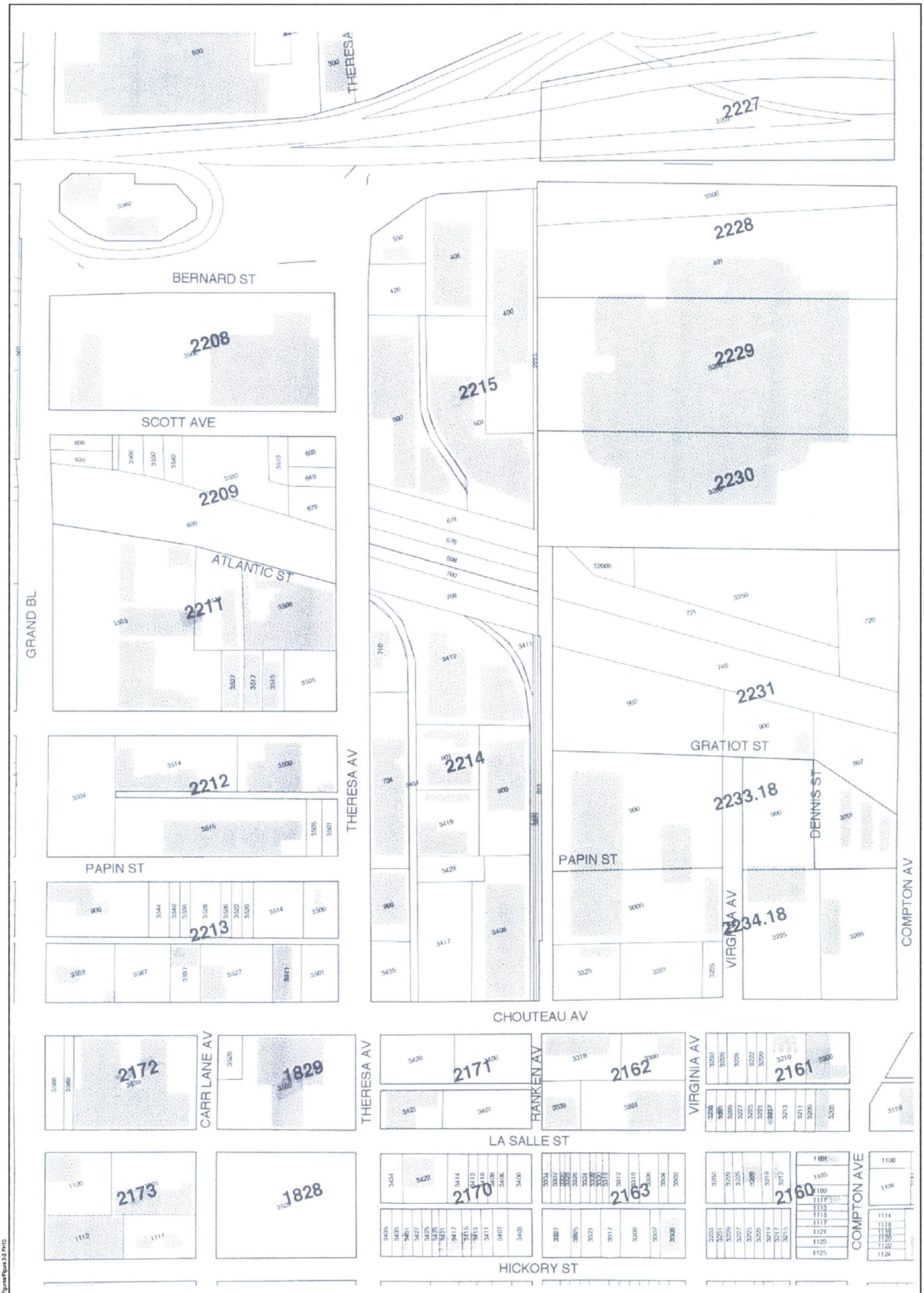
Figure 2
Site Layout Map

Tetra Tech EM Inc.

Date: 9/04/01 Drawn By: Roger Stull Project No: G0099.1.R07.8.18.05.FR

Source: Shannon & Wilson, Inc.

S:/PROJECTS/REPA 2-8 (G0099)/R07/818-Env Indicators/Steelcote/Figures/Figure 2.FH10



Not to Scale

Source: City of St. Louis, Missouri

REPA EI - Steelcote
St. Louis, Missouri

FIGURE 2
Well Survey Area

Tetra Tech EM Inc.

Date: 9-4-01 Drawn By: Roger Stull Project No: G0099.1.R07.8.18.05.FR

S:\PROJECTS\REPA 2-8 (G0099)\R07818 - Env Indicators\Steelcote\Figures\Figure 2-2.FH10